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Building Construction Cost Data

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2014

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The 2014 *Building Construction Cost Data*, 72nd annual edition, and all of the RSMeans annual cost data books for 2014, are dedicated to the memory of our respected colleague and friend, Paula Reale-Camelio.

2014

RSMeans

A division of Reed Construction Data, LLC
Construction Publishers & Consultants
700 Longwater Drive
Norwell, MA 02061
USA

1-800-334-3509
www.rsmeans.com

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RSMeans® Building Construction Cost Data

72ND ANNUAL EDITION

NOV -- 2013

Senior Editor

Phillip R. Waier, PE (1,13)*

Contributing Editors

Christopher Babbitt

Adrian C. Charest, PE (26, 27, 28, 48)

Gary W. Christensen

David G. Drain, PE (33)

Cheryl Elsmore

David Fiske

Robert Fortier, PE (2, 31, 32, 34, 35, 46)

Robert J. Kuchta (8)

Thomas Lane

Robert

Genevi

Melvill

Jeannene D. Murphy

Marilyn Phelan, AIA (9, 10, 11, 12)

Stephen C. Plotner (3, 5)

Siobhan Soucie

Cover Design

Wendy McBay

Paul Robertson

Wayne Engebretson

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Production

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Jonathan Forgit

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Sara Rutan

Mary Lou Geary

Technical Support

Christopher Anderson

Gary L. Hoitt

Kathryn S. Rodriguez

For Reference

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Bob Mewis, CCC (4, 6, 7, 14, 41, 44)

Senior Director, Product Management

Jennifer Johnson

*Numbers in italics are the divisional responsibilities for each editor.
Please contact the designated editor directly with any questions.

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Related RSMeans Products and Services

This book is aimed primarily at commercial and industrial projects or large multi-family housing projects costing \$3,500,000 and up. For civil engineering structures such as bridges, dams, highways, or the like, please refer to *RSMeans Heavy Construction Cost Data*.

The engineers at RSMeans suggest the following products and services as companion information resources to *RSMeans Building Construction Cost Data*:

Construction Cost Data Books

Assemblies Cost Data 2014

Square Foot Costs 2014

Reference Books

Estimating Building Costs

RSMeans Estimating Handbook

Green Building: Project Planning & Estimating

How to Estimate with RSMeans Data

Plan Reading & Material Takeoff

Project Scheduling & Management for Construction

Seminars and In-House Training

Unit Price Estimating

RSMeans Online® Training

RSMeans Data for Job Order Contracting (JOC)

Practical Project Management for Construction Professionals

Scheduling with MSProject for Construction Professionals

Mechanical & Electrical Estimating

RSMeans Online Bookstore

Visit RSMeans at www.rsmeans.com for a one-stop portal for the most reliable and current resources available on the market. Here you can learn about our more than 20 annual cost data books, also available on CD and online versions, as well as our library of reference books and RSMeans seminars.

RSMeans Electronic Data

Get the information found in RSMeans cost books electronically at RSMeansOnline.com.

RSMeans Business Solutions

Cost engineers and analysts conduct facility life cycle and benchmark research studies and predictive cost modeling, as well as offer consultation services for conceptual estimating, real property management, and job order contracting. Research studies are designed with the application of proprietary cost and project data from Reed Construction Data and RSMeans' extensive North American databases. Analysts offer building product manufacturers qualitative and quantitative market research, as well as time/motion studies for new products, and Web-based dashboards for market

opportunity analysis. Clients are from both the public and private sectors, including federal, state, and municipal agencies; corporations; institutions; construction management firms; hospitals; and associations.

RSMeans for Job Order Contracting (JOC)

Best practice job order contracting (JOC) services support the owner in the development of their program. RSMeans develops all required contracting documents, works with stakeholders, and develops qualified and experienced contractor lists. RSMeans JOCWorks® software is the best of class in the functional tools that meet JOC specific requirements. RSMeans data is organized to meet JOC cost estimating requirements.

Construction Costs for Software Applications

More than 25 unit price and assemblies cost databases are available through a number of leading estimating and facilities management software providers (listed below). For more information see the "Other RSMeans Products" pages at the back of this publication.

RSMeansData™ is also available to federal, state, and local government agencies as multi-year, multi-seat licenses.

- 4Clicks-Solutions, LLC
- Assetworks
- Beck Technology
- BSD – Building Systems Design, Inc.
- CMS – Construction Management Software
- Corecon Technologies, Inc.
- CorVet Systems
- Hard Dollar Corporation
- Maxwell Systems
- MC²
- MOCA Systems
- Parsons Corporation
- ProEst
- Refined Data
- Sage Timberline Office
- UDA Technologies, Inc.
- US Cost, Inc.
- VFA – Vanderweil Facility Advisers
- WinEstimator, Inc.
- R & K Solutions
- Tririga

Table of Contents

Foreword	iv
How the Book Is Built: An Overview	v
Absolute Essentials for a Quick Start	vi
Estimating with RSMeans Unit Price Cost Data	vii
How to Use the Book: The Details	ix
Unit Price Section	1
Reference Section	689
Construction Equipment Rental Costs	691
Crew Listings	703
Historical Cost Indexes	739
CCI	740
Location Factors	783
Reference Tables	789
Change Orders	856
Square Foot Costs	861
Abbreviations	871
Index	875
Other RSMeans Products and Services	917
Labor Trade Rates including Overhead & Profit	Inside Back Cover

Foreword

Our Mission

Since 1942, RSMeans has been actively engaged in construction cost publishing and consulting throughout North America.

Today, more than 70 years after RSMeans began, our primary objective remains the same: to provide you, the construction and facilities professional, with the most current and comprehensive construction cost data possible.

Whether you are a contractor, owner, architect, engineer, facilities manager, or anyone else who needs a reliable construction cost estimate, you'll find this publication to be a highly useful and necessary tool.

With the constant flow of new construction methods and materials today, it's difficult to find the time to look at and evaluate all the different construction cost possibilities. In addition, because labor and material costs keep changing, last year's cost information is not a reliable basis for today's estimate or budget.

That's why so many construction professionals turn to RSMeans. We keep track of the costs for you, along with a wide range of other key information, from city cost indexes . . . to productivity rates . . . to crew composition . . . to contractor's overhead and profit rates.

RSMeans performs these functions by collecting data from all facets of the industry and organizing it in a format that is instantly accessible to you. From the preliminary budget to the detailed unit price estimate, you'll find the data in this book useful for all phases of construction cost determination.

The Staff, the Organization, and Our Services

When you purchase one of RSMeans' publications, you are, in effect, hiring the services of a full-time staff of construction and engineering professionals.

Our thoroughly experienced and highly qualified staff works daily at collecting, analyzing, and disseminating comprehensive cost information for your needs. These staff members have years of practical construction experience and engineering training prior to joining the firm. As a result, you can count on them not only for accurate cost figures, but also for additional background reference information that will help you create a realistic estimate.

The RSMeans organization is always prepared to help you solve construction problems through its variety of data solutions, including online, CD, and print book formats, as well as cost estimating expertise available via our business solutions, training, and seminars.

Besides a full array of construction cost estimating books, RSMeans also publishes a number of other reference works for the construction industry. Subjects include construction estimating and project and business management, special topics such as green building and job order contracting, and a library of facility management references.

In addition, you can access all of our construction cost data electronically in convenient CD format or on the web. Visit RSMeansOnline.com for more information on our 24/7 online cost data.

What's more, you can increase your knowledge and improve your construction estimating and management performance with an RSMeans construction seminar or in-house training program. These two-day seminar programs offer unparalleled opportunities for everyone in your organization to become updated on a wide variety of construction-related issues.

RSMeans is also a worldwide provider of construction cost management and analysis services for commercial and government owners.

In short, RSMeans can provide you with the tools and expertise for constructing accurate and dependable construction estimates and budgets in a variety of ways.

Robert Snow Means Established a Tradition of Quality That Continues Today

Robert Snow Means spent years building RSMeans, making certain he always delivered a quality product.

Today, at RSMeans, we do more than talk about the quality of our data and the usefulness of our books. We stand behind all of our data, from historical cost indexes to construction materials and techniques to current costs.

If you have any questions about our products or services, please call us toll-free at 1-800-334-3509. Our customer service representatives will be happy to assist you. You can also visit our website at www.rsmeans.com

How the Book is Built: an Overview

The Construction Specifications Institute (CSI) and Construction Specifications Canada (CSC) have produced the 2012 edition of MasterFormat®, a system of titles and numbers used extensively to organize construction information.

All unit price data in the RSMeans cost data books is now arranged in the 50-division MasterFormat® 2012 system.

A Powerful Construction Tool

You have in your hands one of the most powerful construction tools available today. A successful project is built on the foundation of an accurate and dependable estimate. This book will enable you to construct just such an estimate.

For the casual user the book is designed to be:

- quickly and easily understood so you can get right to your estimate.
- filled with valuable information so you can understand the necessary factors that go into the cost estimate.

For the regular user, the book is designed to be:

- a handy desk reference that can be quickly referred to for key costs.
- a comprehensive, fully reliable source of current construction costs and productivity rates so you'll be prepared to estimate any project.
- a source book for preliminary project cost, product selections, and alternate materials and methods.

To meet all of these requirements, we have organized the book into the following clearly defined sections.

Quick Start

See our "Quick Start" instructions on the following page to get started right away.

Estimating with RSMeans Unit Price Cost Data

Please refer to these steps for guidance on completing an estimate using RSMeans unit price cost data.

How to Use the Book: The Details

This section contains an in-depth explanation of how the book is arranged . . . and how you can use it to determine a reliable construction cost estimate. It includes information about how we develop our cost figures and how to completely prepare your estimate.

Unit Price Section

All cost data has been divided into the 50 divisions according to the MasterFormat system of classification and numbering. For a listing of these divisions and an outline of their subdivisions, see the Unit Price Section Table of Contents.

Estimating tips are included at the beginning of each division.

Reference Section

This section includes information on Equipment Rental Costs, Crew Listings, Historical Cost Indexes, City Cost Indexes, Location Factors, Reference Tables, Change Orders, Square Foot Costs, and a listing of Abbreviations.

Equipment Rental Costs: This section contains the average costs to rent and operate hundreds of pieces of construction equipment.

Crew Listings: This section lists all of the crews referenced in the book. For the purposes of this book, a crew is composed of more than one trade classification and/or the addition of power equipment to any trade classification. Power equipment is included in the cost of the crew. Costs are shown both with bare labor rates and with the installing contractor's overhead and profit added. For each, the total crew cost per eight-hour day and the composite cost per labor-hour are listed.

Historical Cost Indexes: These indexes provide you with data to adjust construction costs over time.

City Cost Indexes: All costs in this book are U.S. national averages. Costs vary because of the regional economy. You can adjust costs by CSI Division to over 700 locations throughout the U.S. and Canada by using the data in this section.

Location Factors: You can adjust total project costs to over 900 locations throughout the U.S. and Canada by using the data in this section.

Reference Tables: At the beginning of selected major classifications in the Unit Price section are reference numbers shown in a shaded box. These numbers refer you to related information in the Reference Section. In this section, you'll find reference tables, explanations, estimating information that support how we develop the unit price data, technical data, and estimating procedures.

Change Orders: This section includes information on the factors that influence the pricing of change orders.

Square Foot Costs: This section contains costs for 59 different building types that allow you to make a rough estimate for the overall cost of a project or its major components.

Abbreviations: A listing of abbreviations used throughout this book, along with the terms they represent, is included in this section.

Index

A comprehensive listing of all terms and subjects in this book will help you quickly find what you need when you are not sure where it occurs in MasterFormat.

The Scope of This Book

This book is designed to be as comprehensive and as easy to use as possible. To that end we have made certain assumptions and limited its scope in two key ways:

1. We have established material prices based on a national average.
2. We have computed labor costs based on a 30-city national average of union wage rates.

For a more detailed explanation of how the cost data is developed, see "How To Use the Book: The Details."

Project Size/Type

The material prices in RSMeans cost data books are "contractor's prices." They are the prices that contractors can expect to pay at the lumberyards, suppliers/distributors warehouses, etc. Small orders of speciality items would be higher than the costs shown, while very large orders, such as truckload lots, would be less. The variation would depend on the size, timing, and negotiating power of the contractor. The labor costs are primarily for new construction or major renovation rather than repairs or minor alterations.

With reasonable exercise of judgment, the figures can be used for any building work.

Absolute Essentials for a Quick Start

If you feel you are ready to use this book and don't think you will need the detailed instructions that begin on the following page, this Absolute Essentials for a Quick Start page is for you. These steps will allow you to get started estimating in a matter of minutes.

1 Scope

Think through the project that you will be estimating, and identify the many individual work tasks that will need to be covered in your estimate.

2 Quantify

Determine the number of units that will be required for each work task that you identified.

3 Pricing

Locate individual Unit Price line items that match the work tasks you identified. The Unit Price Section Table of Contents that begins on page 1 and the Index in the back of the book will help you find these line items.

4 Multiply

Multiply the Total Incl O&P cost for a Unit Price line item in the book by your quantity for that item. The price you calculate will be an estimate for a completed item of work performed by a subcontractor. Keep adding line items in this manner to build your estimate.

5 Project Overhead

Include project overhead items in your estimate. These items are needed to make the job run and are typically, but not always, provided by the General Contractor. They can be found in Division 1. An alternate method of estimating project overhead costs is to apply a percentage of the total project cost.

Include rented tools not included in crews, waste, rubbish handling, and cleanup.

6 Estimate Summary

Include General Contractor's markup on subcontractors, General Contractor's office overhead and profit, and sales tax on materials and equipment.

Adjust your estimate to the project's location by using the City Cost Indexes or Location Factors found in the Reference Section.

Editors' Note: We urge you to spend time reading and understanding the supporting material in the front of this book. An accurate estimate requires experience, knowledge, and careful calculation. The more you know about how we at RSMeans developed the data, the more accurate your estimate will be. In addition, it is important to take into consideration the reference material in the back of the book such as Equipment Listings, Crew Listings, City Cost Indexes, Location Factors, and Reference Tables.

Estimating with RSMeans Unit Price Cost Data

Following these steps will allow you to complete an accurate estimate using RSMeans Unit Price cost data.

1 Scope Out the Project

- Think through the project and identify those CSI Divisions needed in your estimate.
- Identify the individual work tasks that will need to be covered in your estimate.
- The Unit Price data in this book has been divided into 50 Divisions according to the CSI MasterFormat® 2012—their titles are listed on the back cover of your book.
- The Unit Price Section Table of Contents on page 1 may also be helpful when scoping out your project.
- Experienced estimators find it helpful to begin with Division 2 and continue through completion. Division 1 can be estimated after the full project scope is known.

2 Quantify

- Determine the number of units required for each work task that you identified.
- Experienced estimators include an allowance for waste in their quantities.
(Waste is not included in RSMeans Unit Price line items unless so stated.)

3 Price the Quantities

- Use the Unit Price Table of Contents, and the Index, to locate individual Unit Price line items for your estimate.
- Reference Numbers indicated within a Unit Price section refer to additional information that you may find useful.
- The crew indicates who is performing the work for that task. Crew codes are expanded in the Crew Listings in the Reference Section to include all trades and equipment that comprise the crew.

- The Daily Output is the amount of work the crew is expected to do in one day.
- The Labor-Hours value is the amount of time it will take for the crew to install one unit of work.
- The abbreviated Unit designation indicates the unit of measure upon which the crew, productivity, and prices are based.
- Bare Costs are shown for materials, labor, and equipment needed to complete the Unit Price line item. Bare costs do not include waste, project overhead, payroll insurance, payroll taxes, main office overhead, or profit.
- The Total Incl O&P cost is the billing rate or invoice amount of the installing contractor or subcontractor who performs the work for the Unit Price line item.

4 Multiply

- Multiply the total number of units needed for your project by the Total Incl O&P cost for each Unit Price line item.
- Be careful that your take off unit of measure matches the unit of measure in the Unit column.
- The price you calculate is an estimate for a completed item of work.
- Keep scoping individual tasks, determining the number of units required for those tasks, matching each task with individual Unit Price line items in the book, and multiply quantities by Total Incl O&P costs.
- An estimate completed in this manner is priced as if a subcontractor, or set of subcontractors, is performing the work. The estimate does not yet include Project Overhead or Estimate Summary components such as General Contractor markups on subcontracted work, General Contractor office overhead and profit, contingency, and location factor.

5 Project Overhead

- Include project overhead items from Division 1 – General Requirements.
- These items are needed to make the job run. They are typically, but not always, provided by the General Contractor. Items include, but are not limited to, field personnel, insurance, performance bond, permits, testing, temporary utilities, field office and storage facilities, temporary scaffolding and platforms, equipment mobilization and demobilization, temporary roads and sidewalks, winter protection, temporary barricades and fencing, temporary security, temporary signs, field engineering and layout, final cleaning and commissioning.
- Each item should be quantified, and matched to individual Unit Price line items in Division 1, and then priced and added to your estimate.
- An alternate method of estimating project overhead costs is to apply a percentage of the total project cost, usually 5% to 15% with an average of 10% (see General Conditions, page ix).
- Include other project related expenses in your estimate such as:
 - Rented equipment not itemized in the Crew Listings
 - Rubbish handling throughout the project (see 02 41 19.19)

6 Estimate Summary

- Include sales tax as required by laws of your state or county.
- Include the General Contractor's markup on self-performed work, usually 5% to 15% with an average of 10%.
- Include the General Contractor's markup on subcontracted work, usually 5% to 15% with an average of 10%.
- Include General Contractor's main office overhead and profit:
 - RSMeans gives general guidelines on the General Contractor's main office overhead (see section 01 31 13.50 and Reference Number R013113-50).
 - RSMeans gives no guidance on the General Contractor's profit.
 - Markups will depend on the size of the General Contractor's operations, his projected annual revenue, the level of risk he is taking on, and on the level of competition in the local area and for this project in particular.
- Include a contingency, usually 3% to 5%, if appropriate.

- Adjust your estimate to the project's location by using the City Cost Indexes or the Location Factors in the Reference Section:

- Look at the rules on the pages for How to Use the City Cost Indexes to see how to apply the Indexes for your location.
- When the proper Index or Factor has been identified for the project's location, convert it to a multiplier by dividing it by 100, and then multiply that multiplier by your estimated total cost. The original estimated total cost will now be adjusted up or down from the national average to a total that is appropriate for your location.

Editors' Notes:

- 1) *We urge you to spend time reading and understanding the supporting material in the front of this book. An accurate estimate requires experience, knowledge, and careful calculation. The more you know about how we at RSMeans developed the data, the more accurate your estimate will be. In addition, it is important to take into consideration the*

reference material in the back of the book such as Equipment Listings, Crew Listings, City Cost Indexes, Location Factors, and Reference Tables.

- 2) *Contractors who are bidding or are involved in JOC, DOC, SABER, or IDIQ type contracts are cautioned that workers' compensation insurance, federal and state payroll taxes, waste, project supervision, project overhead, main office overhead, and profit are not included in bare costs. The coefficient or multiplier must cover these costs.*

How to Use the Book: The Details

What's Behind the Numbers? The Development of Cost Data

The staff at RSMeans continually monitors developments in the construction industry in order to ensure reliable, thorough, and up-to-date cost information. While overall construction costs may vary relative to general economic conditions, price fluctuations within the industry are dependent upon many factors. Individual price variations may, in fact, be opposite to overall economic trends. Therefore, costs are constantly tracked and complete updates are published yearly. Also, new items are frequently added in response to changes in materials and methods.

Costs—\$ (U.S.)

All costs represent U.S. national averages and are given in U.S. dollars. The RSMeans City Cost Indexes can be used to adjust costs to a particular location. The City Cost Indexes for Canada can be used to adjust U.S. national averages to local costs in Canadian dollars. No exchange rate conversion is necessary.

G The processes or products identified by the green symbol in our publications have been determined to be environmentally responsible and/or resource-efficient solely by the RSMeans engineering staff. The inclusion of the green symbol does not represent compliance with any specific industry association or standard.

Material Costs

The RSMeans staff contacts manufacturers, dealers, distributors, and contractors all across the U.S. and Canada to determine national average material costs. If you have access to current material costs for your specific location, you may wish to make adjustments to reflect differences from the national average. Included within material costs are fasteners for a normal installation. RSMeans engineers use manufacturers' recommendations, written

specifications, and/or standard construction practice for size and spacing of fasteners. Adjustments to material costs may be required for your specific application or location. The manufacturer's warranty is assumed. Extended warranties are not included in the material costs. Material costs do not include sales tax.

Labor Costs

Labor costs are based on the average of wage rates from 30 major U.S. cities. Rates are determined from labor union agreements or prevailing wages for construction trades for the current year. Rates, along with overhead and profit markups, are listed on the inside back cover of this book.

- If wage rates in your area vary from those used in this book, or if rate increases are expected within a given year, labor costs should be adjusted accordingly.

Labor costs reflect productivity based on actual working conditions. In addition to actual installation, these figures include time spent during a normal weekday on tasks such as, material receiving and handling, mobilization at site, site movement, breaks, and cleanup.

Productivity data is developed over an extended period so as not to be influenced by abnormal variations and reflects a typical average.

Equipment Costs

Equipment costs include not only rental, but also operating costs for equipment under normal use. The operating costs include parts and labor for routine servicing such as repair and replacement of pumps, filters, and worn lines. Normal operating expendables, such as fuel, lubricants, tires, and electricity (where applicable), are also included. Extraordinary operating expendables with highly variable wear patterns, such as diamond bits and blades, are excluded. These costs are included under materials. Equipment rental rates are obtained from industry sources throughout North America—contractors, suppliers, dealers, manufacturers, and distributors.

Rental rates can also be treated as reimbursement costs for contractor-owned equipment. Owned equipment costs include depreciation, loan payments, interest, taxes, insurance, storage and major repairs.

Equipment costs do not include operators' wages; nor do they include the cost to move equipment to a job site (mobilization) or from a job site (demobilization).

Equipment Cost/Day—The cost of power equipment required for each crew is included in the Crew Listings in the Reference Section (small tools that are considered as essential everyday tools are not listed out separately). The Crew Listings itemize specialized tools and heavy equipment along with labor trades. The daily cost of itemized equipment included in a crew is based on dividing the weekly bare rental rate by 5 (number of working days per week) and then adding the hourly operating cost times 8 (the number of hours per day). This Equipment Cost/Day is shown in the last column of the Equipment Rental Cost pages in the Reference Section.

Mobilization/Demobilization—The cost to move construction equipment from an equipment yard or rental company to the job site and back again is not included in equipment costs. Mobilization (to the site) and demobilization (from the site) costs can be found in the Unit Price Section. If a piece of equipment is already at the job site, it is not appropriate to utilize mob./demob. costs again in an estimate.

Overhead and Profit

Total Cost including O&P for the *Installing Contractor* is shown in the last column on the Unit Price and/or the Assemblies pages of this book. This figure is the sum of the bare material cost plus 10% for profit, the bare labor cost plus total overhead and profit, and the bare equipment cost plus 10% for profit. Details for the calculation of Overhead and Profit on labor are shown on the inside back cover and in the Reference Section of this book. (See "How RSMeans Data Works" for an example of this calculation.)

General Conditions

Cost data in this book is presented in two ways: Bare Costs and Total Cost including O&P (Overhead and Profit). General Conditions, or General Requirements, of the contract should also be added to the Total Cost including O&P when applicable. Costs for General Conditions are listed in Division 1 of the Unit Price Section and the Reference

Section of this book. General Conditions for the *Installing Contractor* may range from 0% to 10% of the Total Cost including O&P. For the *General or Prime Contractor*, costs for General Conditions may range from 5% to 15% of the Total Cost including O&P, with a figure of 10% as the most typical allowance. If applicable, the Assemblies and Models sections of this book use costs that include the installing contractor's overhead and profit (O&P).

Factors Affecting Costs

Costs can vary depending upon a number of variables. Here's how we have handled the main factors affecting costs.

Quality—The prices for materials and the workmanship upon which productivity is based represent sound construction work. They are also in line with U.S. government specifications.

Overtime—We have made no allowance for overtime. If you anticipate premium time or work beyond normal working hours, be sure to make an appropriate adjustment to your labor costs.

Productivity—The productivity, daily output, and labor-hour figures for each line item are based on working an eight-hour day in daylight hours in moderate temperatures. For work that extends beyond normal work hours or is performed under adverse conditions, productivity may decrease. (See "How RSMeans Data Works" for more on productivity.)

Size of Project—The size, scope of work, and type of construction project will have a significant impact on cost. Economies of scale can reduce costs for large projects. Unit costs can often run higher for small projects.

Location—Material prices in this book are for metropolitan areas. However, in dense urban areas, traffic and site storage limitations may increase costs. Beyond a 20-mile radius of large cities, extra trucking or transportation charges may also increase the material costs slightly. On the other hand, lower wage rates may be in effect. Be sure to consider both of these factors when preparing an estimate, particularly if the job site is located in a central city or remote rural location. In addition, highly specialized subcontract items may require travel and per-diem expenses for mechanics.

Other Factors—

- season of year
- contractor management
- weather conditions
- local union restrictions
- building code requirements
- availability of:
 - adequate energy
 - skilled labor
 - building materials
- owner's special requirements/restrictions
- safety requirements
- environmental considerations

Unpredictable Factors—General business conditions influence "in-place" costs of all items. Substitute materials and construction methods may have to be employed. These may affect the installed cost and/or life cycle costs. Such factors may be difficult to evaluate and cannot necessarily be predicted on the basis of the job's location in a particular section of the country. Thus, where these factors apply, you may find significant but unavoidable cost variations for which you will have to apply a measure of judgment to your estimate.

Rounding of Costs

In general, all unit prices in excess of \$5.00 have been rounded to make them easier to use and still maintain adequate precision of the results. The rounding rules we have chosen are in the following table.

Prices from...	Rounded to the nearest...
\$0.01 to \$5.00	\$.01
\$5.01 to \$20.00	\$.05
\$20.01 to \$100.00	\$.50
\$100.01 to \$300.00	\$1.00
\$300.01 to \$1,000.00	\$5.00
\$1,000.01 to \$10,000.00	\$25.00
\$10,000.01 to \$50,000.00	\$100.00
\$50,000.01 and above	\$500.00

How Subcontracted Items Affect Costs

A considerable portion of all large construction jobs is usually subcontracted. In fact, the percentage done by subcontractors is constantly increasing and may run over 90%. Since the workers employed by these companies do nothing else but install their particular product, they soon become expert in that line. The result is, installation by these firms is accomplished so efficiently that the total in-place cost, even adding the general contractor's overhead and profit, is no more, and often less, than if the principal contractor had handled the installation himself/herself. Companies that deal with construction specialties are anxious to have their product perform well and, consequently, the installation will be the best possible.

Contingencies

The allowance for contingencies generally provides for unforeseen construction difficulties. On alterations or repair jobs, 20% is not too much. If drawings are final and only field contingencies are being considered, 2% or 3% is probably sufficient, and often nothing need be added. Contractually, changes in plans will be covered by extras. The contractor should consider inflationary price trends and possible material shortages during the course of the job. These escalation factors are dependent upon both economic conditions and the anticipated time between the estimate and actual construction. If drawings are not complete or approved, or a budget cost is wanted, it is wise to add 5% to 10%. Contingencies, then, are a matter of judgment. Additional allowances for contingencies are shown in Division 1.

Important Estimating Considerations

The “productivity,” or daily output, of each craftsman includes mobilization and cleanup time, break time and plan layout time, as well as an allowance to carry stock from the storage trailer or location on the job site up to 200’ into the building and to the first or second floor. If material has to be transported over greater distances or to higher floors, an additional allowance should be considered by the estimator. An allowance has also been included in the piping and fittings installation time for leak checking and minor tightening. Equipment installation time includes the following applicable items: positioning, leveling and securing the unit in place, connecting all associated piping, ducts, vents, etc., which shall have been estimated separately, connecting to an adjacent power source, filling/bleeding, startup, adjusting the controls up and down to ensure proper response, setting the integral controls/valves/ regulators/thermostats for proper operation (does not include external building type control systems, DDC systems, etc.), explaining/training owner’s operator, and

warranty. A reasonable breakdown of the labor costs is as follows:

- 1. Movement into building, installation/setting of equipment 35%
- 2. Connection to piping/duct/power, etc. 25%
- 3. Filling/flushing/cleaning/touchup, etc. 15%
- 4. Startup/running adjustments 5%
- 5. Training owner’s representative 5%
- 6. Warranty/call back/service 15%

Note that cranes or other lifting equipment are not included on any lines in the Mechanical divisions. For example, if a crane is required to lift a heavy piece of pipe into place high above a gym floor, or to put a rooftop unit on the roof of a four-story building, etc., it must be added. Due to the potential for extreme variation—from nothing additional required to a major crane or helicopter—we feel that including a nominal amount for “lifting contingency” would be useless and detract from the accuracy of the estimate. When using equipment rental from RSMeans, remember to include the cost of the operator(s).

Estimating Labor-Hours

The labor-hours expressed in this publication are based on Average Installation time, using an efficiency level of approximately 60%–65% (see item 7), which has been found reasonable and acceptable by many contractors. The book uses this national efficiency average to establish a consistent benchmark. For bid situations, adjustments to this efficiency level should be the responsibility of the contractor bidding the project. The unit labor-hour is divided in the following manner. A typical day for a journeyman might be:

1. Study Plans	3%	14.4 min.
2. Material Procurement	3%	14.4 min.
3. Receiving and Storing	3%	14.4 min.
4. Mobilization	5%	24.0 min.
5. Site Movement	5%	24.0 min.
6. Layout and Marking	8%	38.4 min.
7. Actual Installation	64%	307.2 min.
8. Cleanup	3%	14.4 min.
9. Breaks,		
Nonproductive	6%	28.8 min.
	100%	480.0 min.

If any of the percentages expressed in this breakdown do not apply to the particular work or project situation, then that percentage or a portion of it may be deducted from or added to labor-hours.

Final Checklist

Estimating can be a straightforward process provided you remember the basics. Here’s a checklist of some of the steps you should remember to complete before finalizing your estimate.

Did you remember to . . .

- factor in the City Cost Index for your locale?
- take into consideration which items have been marked up and by how much?
- mark up the entire estimate sufficiently for your purposes?
- read the background information on techniques and technical matters that could impact your project time span and cost?
- include all components of your project in the final estimate?
- double check your figures for accuracy?
- call RSMeans if you have any questions about your estimate or the data you’ve found in our publications? Remember, RSMeans stands behind its publications. If you have any questions about your estimate . . . about the costs you’ve used from our books . . . or even about the technical aspects of the job that may affect your estimate, feel free to call the RSMeans editors at 1-800-334-3509.

Free Quarterly Updates

Stay up-to-date throughout 2014 with RSMeans’ free cost data updates four times a year. Sign up online to make sure you have access to the newest data. Every quarter we provide the city cost adjustment factors for hundreds of cities and key materials. Register at: www.rsmeans2014updates.com

Unit Price Section

Table of Contents

Sect. No.	Page	Sect. No.	Page	Sect. No.	Page
	General Requirements				
01 11	Summary of Work	04 25	Unit Masonry Panels	07 27	Air Barriers
01 21	Allowances	04 27	Multiple-Wythe Unit Masonry	07 31	Shingles and Shakes
01 31	Project Management	04 41	Dry-Placed Stone	07 32	Roof Tiles
	and Coordination	04 43	Stone Masonry	07 33	Natural Roof Coverings
01 32	Construction Progress	04 51	Flue Liner Masonry	07 41	Roof Panels
	Documentation	04 54	Refractory Brick Masonry	07 42	Wall Panels
01 41	Regulatory Requirements	04 57	Masonry Fireplaces	07 44	Faced Panels
01 45	Quality Control	04 71	Manufactured Brick Masonry	07 46	Siding
01 51	Temporary Utilities	04 72	Cast Stone Masonry	07 51	Built-Up Bituminous Roofing
01 52	Construction Facilities	04 73	Manufactured Stone Masonry	07 52	Modified Bituminous Membrane
01 54	Construction Aids		Metals		Roofing
01 55	Vehicular Access and Parking	05 01	Maintenance of Metals	07 53	Elastomeric Membrane Roofing
01 56	Temporary Barriers and Enclosures ..	05 05	Common Work Results for Metals ...	07 54	Thermoplastic Membrane Roofing ...
01 58	Project Identification	05 12	Structural Steel Framing	07 55	Protected Membrane Roofing ...
01 71	Examination and Preparation	05 14	Structural Aluminum Framing	07 56	Fluid-Applied Roofing
01 74	Cleaning and Waste Management	05 15	Wire Rope Assemblies	07 57	Coated Foamed Roofing
01 76	Protecting Installed Construction	05 21	Steel Joist Framing	07 58	Roll Roofing
01 91	Commissioning	05 31	Steel Decking	07 61	Sheet Metal Roofing
	Existing Conditions	05 35	Raceway Decking Assemblies	07 65	Flexible Flashing
02 21	Surveys	05 41	Structural Metal Stud Framing	07 71	Roof Specialties
02 32	Geotechnical Investigations	05 42	Cold-Formed Metal Joist Framing	07 72	Roof Accessories
02 41	Demolition	05 44	Cold-Formed Metal Trusses	07 76	Roof Pavers
02 42	Removal and Salvage	05 51	Metal Stairs	07 81	Applied Fireproofing
	of Construction Materials	05 52	Metal Railings	07 84	Firestopping
02 43	Structure Moving	05 53	Metal Gratings	07 91	Preformed Joint Seals
02 56	Site containment	05 54	Metal Floor Plates	07 92	Joint Sealants
02 58	Snow Control	05 55	Metal Stair Treads and Nosings	07 95	Expansion Control
02 65	Underground Storage Tank	05 56	Metal Castings		Openings
	Removal	05 58	Formed Metal Fabrications	08 05	Common Work Results
02 81	Transportation and Disposal	05 71	Decorative Metal Stairs		for Openings
	of Hazardous Materials	05 73	Decorative Metal Railings	08 11	Metal Doors and Frames
02 82	Asbestos Remediation	05 75	Decorative Formed Metal	08 12	Metal Frames
02 83	Lead Remediation		Wood, Plastics & Composites	08 13	Metal Doors
02 85	Mold Remediation	06 05	Common Work Results for Wood,	08 14	Wood Doors
02 91	Chemical Sampling, Testing		Plastics, and Composites	08 16	Composite Doors
	and Analysis	06 11	Wood Framing	08 17	Integrated Door Opening
	Concrete	06 12	Structural Panels		Assemblies
03 01	Maintenance of Concrete	06 13	Heavy Timber Construction	08 31	Access Doors and Panels
03 05	Common Work Results	06 15	Wood Decking	08 32	Sliding Glass Doors
	for Concrete	06 16	Sheathing	08 33	Coiling Doors and Grilles
03 11	Concrete Forming	06 17	Shop-Fabricated Structural Wood	08 34	Special Function Doors
03 15	Concrete Accessories	06 18	Glued-Laminated Construction	08 36	Panel Doors
03 21	Reinforcement Bars	06 22	Millwork	08 38	Traffic Doors
03 22	Fabric and Grid Reinforcing	06 25	Prefinished Paneling	08 41	Entrances and Storefronts
03 23	Stressed Tendon Reinforcing	06 26	Board Paneling	08 42	Entrances
03 24	Fibrous Reinforcing	06 43	Wood Stairs and Railings	08 43	Storefronts
03 30	Cast-In-Place Concrete	06 44	Ornamental Woodwork	08 44	Curtain Wall and Glazed
03 31	Structural Concrete	06 48	Wood Frames		Assemblies
03 35	Concrete Finishing	06 49	Wood Screens and Exterior	08 45	Translucent Wall and
03 37	Specialty Placed Concrete		Wood Shutters		Roof Assemblies
03 39	Concrete Curing	06 51	Structural Plastic Shapes	08 51	Metal Windows
03 41	Precast Structural Concrete		and Plates	08 52	Wood Windows
03 45	Precast Architectural Concrete	06 52	Plastic Structural Assemblies	08 53	Plastic Windows
03 47	Site-Cast Concrete	06 63	Plastic Railings	08 54	Composite Windows
03 48	Precast Concrete Specialties	06 65	Plastic Simulated Wood Trim	08 56	Special Function Windows
03 51	Cast Roof Decks		Thermal & Moisture Protection	08 62	Unit Skylights
03 52	Lightweight Concrete	07 01	Operation and Maint. of Thermal	08 71	Door Hardware
	Roof Insulation		and Moisture Protection	08 74	Access Control Hardware
03 53	Concrete Topping	07 05	Common Work Results for Thermal	08 75	Window Hardware
03 54	Cast Underlayment		and Moisture Protection	08 79	Hardware Accessories
03 62	Non-Shrink Grouting	07 11	Dampproofing	08 81	Glass Glazing
03 63	Epoxy Grouting	07 12	Built-up Bituminous Waterproofing ..	08 83	Mirrors
03 81	Concrete Cutting	07 13	Sheet Waterproofing	08 84	Plastic Glazing
03 82	Concrete Boring	07 16	Cementitious and Reactive	08 87	Glazing Surface Films
	Masonry		Waterproofing	08 88	Special Function Glazing
04 01	Maintenance of Masonry	07 17	Bentonite Waterproofing	08 91	Louvers
04 05	Common Work Results	07 19	Water Repellents	08 95	Vents
	for Masonry	07 21	Thermal Insulation		Finishes
04 21	Clay Unit Masonry	07 22	Roof and Deck Insulation	09 01	Maintenance of Finishes
04 22	Concrete Unit Masonry	07 24	Exterior Insulation	09 05	Common Work Results
04 23	Glass Unit Masonry		and Finish Systems		for Finishes
04 24	Adobe Unit Masonry	07 25	Weather Barriers	09 21	Plaster and Gypsum Board
		07 26	Vapor Retarders		Assemblies

Table of Contents (cont.)

Sect. No.	Page	Sect. No.	Page	Sect. No.	Page	
09 22	Supports for Plaster and Gypsum Board318	11 27	Photographic Processing Equipment400	14 12	Electric Dumbwaiters462	
09 23	Gypsum Plastering322	11 31	Residential Appliances400	14 21	Electric Traction Elevators462	
09 24	Cement Plastering323	11 33	Retractable Stairs403	14 24	Hydraulic Elevators463	
09 25	Other Plastering323	11 41	Foodservice Storage Equipment403	14 27	Custom Elevator Cabs and Doors464	
09 26	Veneer Plastering323	11 42	Food Preparation Equipment405	14 28	Elevator Equipment and Controls ...465	
09 28	Backing Boards and Underlayments324	11 43	Food Delivery Carts and Conveyors405	14 31	Escalators466	
09 29	Gypsum Board324	11 44	Food Cooking Equipment406	14 32	Moving Walks467	
09 30	Tiling328	11 46	Food Dispensing Equipment406	14 42	Wheelchair Lifts467	
09 34	Waterproofing-Membrane Tiling331	11 47	Ice Machines407	14 45	Vehicle Lifts467	
09 51	Acoustical Ceilings331	11 48	Cleaning and Disposal Equipment ...407	14 51	Correspondence and Parcel Lifts468	
09 53	Acoustical Ceiling Suspension Assemblies333	11 52	Audio-Visual Equipment408	14 91	Facility Chutes468	
09 54	Specialty Ceilings334	11 53	Laboratory Equipment409	14 92	Pneumatic Tube Systems469	
09 62	Specialty Flooring334	11 57	Vocational Shop Equipment410	Fire Suppression		
09 63	Masonry Flooring335	11 61	Broadcast, Theater, and Stage Equipment411	21 05	Common Work Results for Fire Suppression472	
09 64	Wood Flooring335	11 62	Musical Equipment412	21 11	Facility Fire-Suppression Water-Service Piping472	
09 65	Resilient Flooring337	11 66	Athletic Equipment412	21 12	Fire-Suppression Standpipes473	
09 66	Terrazzo Flooring339	11 67	Recreational Equipment413	21 13	Fire-Suppression Sprinkler Systems ..473	
09 67	Fluid-Applied Flooring341	11 68	Play Field Equipment and Structures414	21 21	Carbon-Dioxide Fire-Extinguishing Systems474	
09 68	Carpeting342	11 71	Medical Sterilizing Equipment415	21 22	Clean-Agent Fire-Extinguishing Systems475	
09 69	Access Flooring344	11 72	Examination and Treatment Equipment416	21 31	Centrifugal Fire Pumps475	
09 72	Wall Coverings344	11 73	Patient Care Equipment416	Plumbing		
09 77	Special Wall Surfacing345	11 74	Dental Equipment417	22 01	Operation and Maintenance of Plumbing478	
09 81	Acoustic Insulation346	11 76	Operating Room Equipment417	22 05	Common Work Results for Plumbing479	
09 84	Acoustic Room Components347	11 77	Radiology Equipment418	22 07	Plumbing Insulation485	
09 91	Painting347	11 78	Mortuary Equipment418	22 11	Facility Water Distribution486	
09 93	Staining and Transparent Finishing ..360	11 82	Solid Waste Handling Equipment418	22 13	Facility Sanitary Sewerage494	
09 96	High-Performance Coatings360	11 91	Religious Equipment419	22 14	Facility Storm Drainage496	
09 97	Special Coatings362	Furnishings			22 31	Domestic Water Softeners498
10 05	Common Work Results for Specialties364	12 21	Window Blinds422	22 33	Electric Domestic Water Heaters498	
10 11	Visual Display Units364	12 22	Curtains and Drapes422	22 34	Fuel-Fired Domestic Water Heaters ...499	
10 13	Directories367	12 23	Interior Shutters423	22 35	Domestic Water Heat Exchangers ...500	
10 14	Signage368	12 24	Window Shades424	22 41	Residential Plumbing Fixtures500	
10 17	Telephone Specialties369	12 32	Manufactured Wood Casework424	22 42	Commercial Plumbing Fixtures503	
10 21	Compartments and Cubicles369	12 35	Specialty Casework427	22 45	Emergency Plumbing Fixtures507	
10 22	Partitions374	12 36	Countertops428	22 47	Drinking Fountains and Water Coolers508	
10 26	Wall and Door Protection377	12 46	Furnishing Accessories430	22 51	Swimming Pool Plumbing Systems ..509	
10 28	Toilet, Bath, and Laundry Accessories378	12 48	Rugs and Mats431	22 52	Fountain Plumbing Systems509	
10 31	Manufactured Fireplaces380	12 51	Office Furniture431	22 66	Chemical-Waste Systems for Lab. and Healthcare Facilities510	
10 32	Fireplace Specialties381	12 52	Seating432	Heating Ventilation Air Conditioning		
10 35	Stoves381	12 54	Hospitality Furniture433	23 05	Common Work Results for HVAC ...512	
10 43	Emergency Aid Specialties382	12 55	Detention Furniture434	23 07	HVAC Insulation514	
10 44	Fire Protection Specialties382	12 56	Institutional Furniture434	23 09	Instrumentation and Control for HVAC515	
10 51	Lockers383	12 61	Fixed Audience Seating435	23 13	Facility Fuel-Storage Tanks516	
10 55	Postal Specialties384	12 63	Stadium and Arena Seating436	23 21	Hydronic Piping and Pumps518	
10 56	Storage Assemblies385	12 67	Pews and Benches436	23 22	Steam and Condensate Piping and Pumps521	
10 57	Wardrobe and Closet Specialties385	12 92	Interior Planters and Artificial Plants436	23 31	HVAC Ducts and Casings521	
10 71	Exterior Protection386	12 93	Site Furnishings437	23 33	Air Duct Accessories523	
10 73	Protective Covers386	Special Construction			23 34	HVAC Fans525
10 74	Manufactured Exterior Specialties387	13 05	Common Work Results for Special Construction440	23 37	Air Outlets and Inlets528	
10 75	Flagpoles388	13 11	Swimming Pools443	23 38	Ventilation Hoods531	
10 81	Pest Control Devices389	13 17	Tubs and Pools445	23 41	Particulate Air Filtration531	
10 88	Scales390	13 18	Ice Rinks445	23 42	Gas-Phase Air Filtration532	
Equipment		13 21	Controlled Environment Rooms445	23 43	Electronic Air Cleaners532	
11 05	Common Work Results for Equipment392	13 24	Special Activity Rooms447	23 51	Breechings, Chimneys, and Stacks ...532	
11 11	Vehicle Service Equipment394	13 28	Athletic and Recreational Special Construction448	23 52	Heating Boilers533	
11 12	Parking Control Equipment394	13 31	Fabric Structures448	23 54	Furnaces535	
11 13	Loading Dock Equipment395	13 34	Fabricated Engineered Structures450	23 55	Fuel-Fired Heaters535	
11 14	Pedestrian Control Equipment396	13 36	Towers457	23 56	Solar Energy Heating Equipment536	
11 16	Vault Equipment396	13 42	Building Modules457	23 57	Heat Exchangers for HVAC537	
11 17	Teller and Service Equipment397	13 48	Sound, Vibration, and Seismic Control457	23 62	Packaged Compressor and Condenser Units538	
11 19	Detention Equipment397	13 49	Radiation Protection458	23 63	Refrigerant Condensers538	
11 21	Mercantile and Service Equipment ...398	13 53	Meteorological Instrumentation459	23 64	Packaged Water Chillers538	
11 23	Commercial Laundry and Dry Cleaning Equipment398	Conveying Equipment				
11 24	Maintenance Equipment399	14 11	Manual Dumbwaiters462			
11 26	Unit Kitchens400					

Table of Contents (cont.)

Sect. No.	Page	Sect. No.	Page	Sect. No.	Page
23 65	Cooling Towers 540	28 31	Fire Detection and Alarm 591	32 93	Plants 648
23 73	Indoor Central-Station Air-Handling Units 540	28 33	Gas Detection and Alarm 592	32 94	Planting Accessories 650
23 74	Packaged Outdoor HVAC Equipment 541	28 39	Mass Notification Systems 592	32 96	Transplanting 651
23 81	Decentralized Unitary HVAC Equipment 542		Earthwork		Utilities
23 82	Convection Heating and Cooling Units 543	31 05	Common Work Results for Earthwork 594	33 01	Operation and Maintenance of Utilities 654
23 83	Radiant Heating Units 546	31 06	Schedules for Earthwork 594	33 05	Common Work Results for Utilities 654
23 84	Humidity Control Equipment 548	31 11	Clearing and Grubbing 595	33 11	Water Utility Distribution Piping 655
	Electrical	31 13	Selective Tree and Shrub Removal and Trimming 596	33 12	Water Utility Distribution Equipment 657
26 05	Common Work Results for Electrical 550	31 14	Earth Stripping and Stockpiling 597	33 16	Water Utility Storage Tanks 658
26 09	Instrumentation and Control for Electrical Systems 566	31 22	Grading 597	33 21	Water Supply Wells 659
26 12	Medium-Voltage Transformers 567	31 23	Excavation and Fill 598	33 31	Sanitary Utility Sewerage Piping 659
26 22	Low-Voltage Transformers 568	31 25	Erosion and Sedimentation Controls 619	33 36	Utility Septic Tanks 660
26 24	Switchboards and Panelboards 568	31 31	Soil Treatment 619	33 41	Storm Utility Drainage Piping 661
26 25	Enclosed Bus Assemblies 571	31 32	Soil Stabilization 619	33 42	Culverts 662
26 27	Low-Voltage Distribution Equipment 573	31 33	Rock Stabilization 620	33 44	Storm Utility Water Drains 663
26 28	Low-Voltage Circuit Protective Devices 574	31 36	Gabions 620	33 46	Subdrainage 664
26 29	Low-Voltage Controllers 575	31 37	Riprap 620	33 49	Storm Drainage Structures 664
26 32	Packaged Generator Assemblies 575	31 41	Shoring 621	33 51	Natural-Gas Distribution 665
26 33	Battery Equipment 575	31 43	Concrete Raising 622	33 52	Liquid Fuel Distribution 665
26 35	Power Filters and Conditioners 576	31 45	Vibroflotation and Densification 622	33 71	Electrical Utility Transmission and Distribution 666
26 42	Cathodic Protection 576	31 46	Needle Beams 622	33 81	Communications Structures 667
26 51	Interior Lighting 577	31 48	Underpinning 622		Transportation
26 52	Emergency Lighting 579	31 52	Cofferdams 623	34 01	Operation and Maintenance of Transportation 670
26 53	Exit Signs 579	31 56	Slurry Walls 623	34 11	Rail Tracks 670
26 54	Classified Location Lighting 580	31 62	Driven Piles 624	34 41	Roadway Signaling and Control Equipment 671
26 55	Special Purpose Lighting 580	31 63	Bored Piles 626	34 71	Roadway Construction 671
26 56	Exterior Lighting 580		Exterior Improvements	34 72	Railway Construction 673
26 61	Lighting Systems and Accessories 582	32 01	Operation and Maintenance of Exterior Improvements 630		Waterway & Marine
26 71	Electrical Machines 583	32 06	Schedules for Exterior Improvements 630	35 20	Waterway and Marine Construction and Equipment 676
	Communications	32 11	Base Courses 631	35 51	Floating Construction 676
27 13	Communications Backbone Cabling 586	32 12	Flexible Paving 632		Material Processing & Handling Equipment
27 41	Audio-Video Systems 586	32 13	Rigid Paving 633	41 21	Conveyors 678
27 51	Distributed Audio-Video Communications Systems 586	32 14	Unit Paving 634	41 22	Cranes and Hoists 678
27 52	Healthcare Communications and Monitoring Systems 587	32 16	Curbs, Gutters, Sidewalks, and Driveways 635		Pollution Control Equipment
27 53	Distributed Systems 587	32 17	Paving Specialties 636	44 11	Particulate Control Equipment 682
	Electronic Safety & Security	32 18	Athletic and Recreational Surfacing 638		Water and Wastewater Equipment
28 13	Access Control 590	32 31	Fences and Gates 639	46 07	Packaged Water and Wastewater Treatment Equipment 686
28 16	Intrusion Detection 590	32 32	Retaining Walls 642	48 15	Wind Energy Electrical Power Generation Equipment 688
28 23	Video Surveillance 590	32 34	Fabricated Bridges 644		
		32 35	Screening Devices 645		
		32 84	Planting Irrigation 645		
		32 91	Planting Preparation 646		
		32 92	Turf and Grasses 647		

How RSMeans Unit Price Data Works

All RSMeans unit price data is organized in the same way.

It is important to understand the structure, so that you can find information easily and use it correctly.

RSMeans **Line Numbers** consist of 12 characters, which identify a unique location in the database for each task. The first 6 or 8 digits conform to the Construction Specifications Institute MasterFormat® 2012. The remainder of the digits are a further breakdown by RSMeans in order to arrange items in understandable groups of similar tasks. Line numbers are consistent across all RSMeans publications, so a line number in any RSMeans product will always refer to the same unit of work.

RSMeans engineers have created **reference** information to assist you in your estimate. If there is information that applies to a section, it will be indicated at the start of the section. In this case, R033105-10 provides information on the proportionate quantities of formwork, reinforcing, and concrete used in cast-in-place concrete items such as footings, slabs, beams, and columns. The Reference Section is located in the back of the book on the pages with a gray edge.

RSMeans **Descriptions** are shown in a hierarchical structure to make them readable. In order to read a complete description, read up through the indents to the top of the section. Include everything that is above and to the left that is not contradicted by information below.

For instance, the complete description for line 03 30 53.40 3550 is "Concrete in place, including forms (4 uses), Grade 60 rebar, concrete (Portland cement Type I), placement and finishing unless otherwise indicated; Equipment pad (3000 psi), 4' x 4' x 6" thick."

When using **RSMeans data**, it is important to read through an entire section to ensure that you use the data that most closely matches your work. Note that sometimes there is additional information shown in the section that may improve your price. There are frequently lines that further describe, add to, or adjust data for specific situations.

03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

03 30 53.40 Concrete In Place

0010	CONCRETE IN PLACE	R033105-10
0020	Including forms (4 uses), Grade 60 rebar, concrete (Portland cement	R033105-20
0050	Type I), placement and finishing unless otherwise indicated	R033105-50
0300	Beams (3500 psi), 5 kip per L.F., 10' span	R033105-65
0350	25' span	R033105-70
0500	Chimney foundations (5000 psi), over 5 C.Y.	R033105-85
0510	(3500 psi), under 5 C.Y.	
0700	Columns, square (4000 psi), 12" x 12", less than 2% reinforcing	
3450	Over 10,000 S.F.	
3500	Add per floor for 3 to 6 stories high	
3520	For 7 to 20 stories high	
3540	Equipment pad (3000 psi), 3' x 3' x 6" thick	
3550	4' x 4' x 6" thick	
3560	5' x 5' x 8" thick	
3570	6' x 6' x 8" thick	

The data published in RSMeans print books represents a "national average" cost. This data should be modified to the project location using the **City Cost Indexes** or **Location Factors** tables found in the Reference Section (see pages 740–788). Use the location factors to adjust estimate totals if the project covers multiple trades. Use the city cost indexes (CCI) for single trade projects or projects where a more detailed analysis is required. All figures in the two tables are derived from the same research. The last row of data in the CCI, the weighted average, is the same as the numbers reported for each location in the location factor table.

Crews include labor or labor and equipment necessary to accomplish each task. In this case, Crew C-14H is used. RSMeans selects a crew to represent the workers and equipment that are typically used for that task. In this case, Crew C-14H consists of one carpenter foreman (outside), two carpenters, one rodman, one laborer, one cement finisher, and one gas engine vibrator. Details of all crews can be found in the reference section.

Crews

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-14H						
1 Carpenter Foreman (outside)	47.85	\$382.80	573.65	\$590.80	\$45.15	\$59.42
2 Carpenters	45.85	733.60	70.75	1,132.00		
1 Rodman (part)	50.65	425.20	79.55	636.40		
1 Laborer	36.65	293.20	56.55	452.40		
1 Cement Finisher	34.05	352.40	65.10	520.80		
1 Gas Engine Vibrator		33.00		35.30	69	76
48 L.H. Daily Totals		\$2,090.20		\$3,368.70	\$45.84	\$70.12

The **Daily Output** is the amount of work that the crew can do in a normal 8-hour workday, including mobilization, layout, movement of materials, and cleanup. In this case, crew C-14H can install thirty 4' x 4' x 6" thick concrete pads in a day. Daily output is variable, based on many factors, including the size of the job, location, and environmental conditions. RSMeans data represents work done in daylight (or adequate lighting) and temperate conditions.

Bare Costs are the costs of materials, labor, and equipment that the installing contractor pays. They represent the cost, in U.S. dollars, for one unit of work. They do not include any markups for profit or labor burden.

Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
C-14A	15.62	12.804	C.Y.	315	590	47.50	952.50	1,325
"	18.55	10.782		335	495	40	870	1,175
C-14C	32.22	3.476		147	153	1.01	301.01	400
"	23.71	4.724		173	207	1.37	381.37	515
C-14A	11.96	16.722		355	770	62	1,187	1,675
	2200	.025		.80	1.04	.32	2.16	2.83
	31800	.002			.07	.02	.09	.13
	21200	.003			.11	.03	.14	.20
C-14H	45	1.067	Ea.	44.50	48	.74	93.24	124
	30	1.600		66.50	72	1.10	139.60	185
	18	2.667		119	120	1.84	240.84	320
	14	3.429		160	155	2.87	317.37	415

The **Total Incl O&P column** is the total cost, including overhead and profit, that the installing contractor will charge the customer. This represents the cost of materials plus 10% profit, the cost of labor plus labor burden and 10% profit, and the cost of equipment plus 10% profit. It does not include the general contractor's overhead and profit. Note: See the inside back cover for details of how RSMeans calculates labor burden.

The **Total column** represents the total bare cost for the installing contractor, in U.S. dollars. In this case, the sum of \$66.50 for material + \$72.00 for labor + \$1.10 for equipment is \$139.60.

The figure in the **Labor Hours** column is the amount of labor required to perform one unit of work—in this case the amount of labor required to construct one 4' x 4' equipment pad. This figure is calculated by dividing the number of hours of labor in the crew by the daily output (48 labor hours divided by 30 pads = 1.6 hours of labor per pad). Multiply 1.600 times 60 to see the value in minutes: 60 x 1.6 = 96 minutes. Note: the labor hour figure is not dependent on the crew size. A change in crew size will result in a corresponding change in daily output, but the labor hours per unit of work will not change.

All RSMeans unit cost data includes the typical **Unit of Measure** used for estimating that item. For concrete-in-place the typical unit is cubic yards (C.Y.) or each (Ea.). For installing broadloom carpet it is square yard, and for gypsum board it is square foot. The estimator needs to take special care that the unit in the data matches the unit in the take-off. Unit conversions may be found in the Reference Section.

Estimating Tips

01 20 00 Price and Payment Procedures

- Allowances that should be added to estimates to cover contingencies and job conditions that are not included in the national average material and labor costs are shown in section 01 21.
- When estimating historic preservation projects (depending on the condition of the existing structure and the owner's requirements), a 15%-20% contingency or allowance is recommended, regardless of the stage of the drawings.

01 30 00 Administrative Requirements

- Before determining a final cost estimate, it is a good practice to review all the items listed in Subdivisions 01 31 and 01 32 to make final adjustments for items that may need customizing to specific job conditions.
- Requirements for initial and periodic submittals can represent a significant cost to the General Requirements of a job. Thoroughly check the submittal specifications when estimating a project to determine any costs that should be included.

01 40 00 Quality Requirements

- All projects will require some degree of Quality Control. This cost is not included in the unit cost of construction listed in each division. Depending upon

the terms of the contract, the various costs of inspection and testing can be the responsibility of either the owner or the contractor. Be sure to include the required costs in your estimate.

01 50 00 Temporary Facilities and Controls

- Barricades, access roads, safety nets, scaffolding, security, and many more requirements for the execution of a safe project are elements of direct cost. These costs can easily be overlooked when preparing an estimate. When looking through the major classifications of this subdivision, determine which items apply to each division in your estimate.
- Construction Equipment Rental Costs can be found in the Reference Section in section 01 54 33. Operators' wages are not included in equipment rental costs.
- Equipment mobilization and demobilization costs are not included in equipment rental costs and must be considered separately in section 01 54 36.50.
- The cost of small tools provided by the installing contractor for his workers is covered in the "Overhead" column on the "Installing Contractor's Overhead and Profit" table that lists labor trades, base rates and markups and, therefore, is included in the "Total Incl. O&P" cost of any Unit Price line item. For those users who are constrained by contract terms to use only bare costs, there are two line

items in section 01 54 39.70 for small tools as a percentage of bare labor cost. If some of those users are further constrained by contract terms to refrain from using line items from Division 1, you are advised to cover the cost of small tools within your coefficient or multiplier.

01 70 00 Execution and Closeout Requirements

- When preparing an estimate, thoroughly read the specifications to determine the requirements for Contract Closeout. Final cleaning, record documentation, operation and maintenance data, warranties and bonds, and spare parts and maintenance materials can all be elements of cost for the completion of a contract. Do not overlook these in your estimate.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

01 11 Summary of Work

01 11 31 – Professional Consultants

			Daily	Labor-			2014 Bare Costs		Total	Total
			Crew	Output	Hours	Unit	Labor	Equipment		Incl O&P
0010	ARCHITECTURAL FEES	R011110-10								
0020	For new construction									
0060	Minimum					Project			4.90%	4.90%
0090	Maximum								16%	16%
0100	For alteration work, to \$500,000, add to new construction fee								50%	50%
0150	Over \$500,000, add to new construction fee								25%	25%
2000	For "Greening" of building	G				▼			3%	3%

01 11 31.20 Construction Management Fees

0010	CONSTRUCTION MANAGEMENT FEES									
0020	\$1,000,000 job, minimum					Project			4.50%	4.50%
0050	Maximum								7.50%	7.50%
0060	For work to \$100,000								10%	10%
0070	To \$250,000								9%	9%
0090	To \$1,000,000								6%	6%
0100	To \$5,000,000								5%	5%
0110	To \$10,000,000								4%	4%
0300	\$50,000,000 job, minimum								2.50%	2.50%
0350	Maximum								4%	4%

01 11 31.30 Engineering Fees

0010	ENGINEERING FEES	R011110-30								
0020	Educational planning consultant, minimum					Project			.50%	.50%
0100	Maximum					"			2.50%	2.50%
0200	Electrical, minimum					Contract			4.10%	4.10%
0300	Maximum								10.10%	10.10%
0400	Elevator & conveying systems, minimum								2.50%	2.50%
0500	Maximum								5%	5%
0600	Food service & kitchen equipment, minimum								8%	8%
0700	Maximum								12%	12%
0800	Landscaping & site development, minimum								2.50%	2.50%
0900	Maximum								6%	6%
1000	Mechanical (plumbing & HVAC), minimum								4.10%	4.10%
1100	Maximum					▼			10.10%	10.10%
1200	Structural, minimum					Project			1%	1%
1300	Maximum					"			2.50%	2.50%

01 11 31.50 Models

0010	MODELS									
0020	Cardboard & paper, 1 building, minimum					Ea.	735		735	810
0050	Maximum						1,675		1,675	1,850
0100	2 buildings, minimum						985		985	1,075
0150	Maximum					▼	2,225		2,225	2,450
0200	Plexiglass and metal, basic layout					SF Flr.	.07		.07	.08
0210	Including equipment and personnel					"	.32		.32	.35
0300	Site plan layout, minimum					Ea.	1,400		1,400	1,550
0350	Maximum					"	2,350		2,350	2,600

01 11 31.75 Renderings

0010	RENDERINGS Color, matted, 20" x 30", eye level,									
0020	1 building, minimum					Ea.	2,050		2,050	2,275
0050	Average						2,875		2,875	3,175
0100	Maximum						4,625		4,625	5,100
1000	5 buildings, minimum						4,125		4,125	4,525
1100	Maximum						8,250		8,250	9,075
2000	Aerial perspective, color, 1 building, minimum					▼	3,000		3,000	3,275

01 11 Summary of Work

01 11 31 – Professional Consultants

01 11 31.75 Renderings		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
2100	Maximum				Ea.	8,150			8,150	8,950
3000	5 buildings, minimum					5,875			5,875	6,450
3100	Maximum					11,700			11,700	12,900

01 21 Allowances

01 21 16 – Contingency Allowances

01 21 16.50 Contingencies

0010	CONTINGENCIES , Add to estimate									
0020	Conceptual stage					Project			20%	20%
0050	Schematic stage								15%	15%
0100	Preliminary working drawing stage (Design Dev.)								10%	10%
0150	Final working drawing stage								3%	3%

01 21 55 – Job Conditions Allowance

01 21 55.50 Job Conditions

0010	JOB CONDITIONS Modifications to applicable									
0020	cost summaries									
0100	Economic conditions, favorable, deduct					Project			2%	2%
0200	Unfavorable, add								5%	5%
0300	Hoisting conditions, favorable, deduct								2%	2%
0400	Unfavorable, add								5%	5%
0500	General Contractor management, experienced, deduct								2%	2%
0600	Inexperienced, add								10%	10%
0700	Labar availability, surplus, deduct								1%	1%
0800	Shortage, odd								10%	10%
0900	Material storage oreo, ovable, deduct								1%	1%
1000	Not ovable, add								2%	2%
1100	Subcontractar availability, surplus, deduct								5%	5%
1200	Shartage, odd								12%	12%
1300	Work spoce, ovable, deduct								2%	2%
1400	Nat ovable, add								5%	5%

01 21 57 – Overtime Allowance

01 21 57.50 Overtime

0010	OVERTIME for early completion of projects or where	R012909-90								
0020	labor shortages exist, add to usual labor, up to				Costs			100%		

01 21 61 – Cost Indexes

01 21 61.10 Construction Cost Index

0010	CONSTRUCTION COST INDEX (Reference) over 930 zip code locations in								
0020	the U.S. and Canada, total bldg. cost, min. (Longview, TX)				%				73.50%
0050	Average								100%
0100	Maximum (New York, NY)								131.10%

01 21 61.20 Historical Cost Indexes

0010	HISTORICAL COST INDEXES (See Reference Section)								
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01 21 61.30 Labor Index

0010	LABOR INDEX (Reference) For over 930 zip code locations in								
0020	the U.S. and Canada, minimum (Longview, TX)				%			40.50%	
0050	Average							100%	
0100	Maximum (New York, NY)							166.40%	

01 21 Allowances

01 21 61 – Cost Indexes

01 21 61.50 Material Index				Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	MATERIAL INDEX (Reference) Far over 930 zip code locations in											
0020	the U.S. and Canada, minimum (Vale, OR)							%	91.30%			
0040	Average								100%			
0060	Maximum (Ketchikan, AK)								132%			

01 21 63 – Taxes

01 21 63.10 Taxes												
0010	TAXES	R012909-80										
0020	Sales tax, State, average						%	5.06%				
0050	Maximum	R012909-85						7.25%				
0200	Social Security, on first \$115,800 of wages								7.65%			
0300	Unemployment, combined Federal and State, minimum								.60%			
0350	Average								7.80%			
0400	Maximum								13.50%			

01 31 Project Management and Coordination

01 31 13 – Project Coordination

01 31 13.20 Field Personnel												
0010	FIELD PERSONNEL											
0020	Clerk, average					Week		435		435		675
0100	Field engineer, minimum							1,025		1,025		1,600
0120	Average							1,350		1,350		2,100
0140	Maximum							1,525		1,525		2,375
0160	General purpose laborer, average							1,475		1,475		2,250
0180	Project manager, minimum							1,925		1,925		2,975
0200	Average							2,225		2,225		3,425
0220	Maximum							2,525		2,525		3,925
0240	Superintendent, minimum							1,875		1,875		2,900
0260	Average							2,050		2,050		3,200
0280	Maximum							2,350		2,350		3,625
0290	Timekeeper, average							1,200		1,200		1,850

01 31 13.30 Insurance

0010	INSURANCE	R013113-40										
0020	Builders risk, standard, minimum					Job				.24%		.24%
0050	Maximum	R013113-50								.64%		.64%
0200	All-risk type, minimum									.25%		.25%
0250	Maximum	R013113-60								.62%		.62%
0400	Contractor's equipment floater, minimum					Value				.50%		.50%
0450	Maximum					"				1.50%		1.50%
0600	Public liability, average					Job				2.02%		2.02%
0800	Workers' compensation & employer's liability, average											
0850	by trade, carpentry, general					Payroll		15.38%				
0900	Clerical							.51%				
0950	Concrete							13.15%				
1000	Electrical							5.83%				
1050	Excavation							9.69%				
1100	Glazing							13.15%				
1150	Insulation							11.67%				
1200	Roofing							8.12%				
1250	Masonry							13.49%				
1300	Painting & decorating							11.54%				

01 31 Project Management and Coordination

01 31 13 – Project Coordination

01 31 13.30 Insurance		Daily Crew	Labor- Output	Hours Unit	Material	2014 Bare Costs		Total	Total Incl O&P
						Labor	Equipment		
1350	Pile driving			Poyroll		14.65%			
1400	Plastering					11.55%			
1450	Plumbing					7.08%			
1500	Roofing					31.29%			
1550	Sheet metal work (HVAC)					8.79%			
1600	Steel erection, structural					34.64%			
1650	Tile work, interior ceramic					8.54%			
1700	Waterproofing, brush or hand caulking					6.86%			
1800	Wrecking					29.21%			
2000	Range of 35 trades in 50 states, excl. wrecking, min.					2.48%			
2100	Average					14%			
2200	Maximum					150%			

01 31 13.40 Main Office Expense

0010	MAIN OFFICE EXPENSE Average for General Contractors	R013113-50							
0020	As a percentage of their annual volume								
0125	Annual volume under 1 million dollars			% Vol.				17.50%	
0145	Up to 2.5 million dollars							8%	
0150	Up to 4.0 million dollars							6.80%	
0200	Up to 7.0 million dollars							5.60%	
0250	Up to 10 million dollars							5.10%	
0300	Over 10 million dollars							3.90%	

01 31 13.50 General Contractor's Mark-Up

0010	GENERAL CONTRACTOR'S MARK-UP on Change Orders								
0200	Extra work, by subcontractors, odd			%				10%	10%
0250	By General Contractor, odd							15%	15%
0400	Omitted work, by subcontractors, deduct all but							5%	5%
0450	By General Contractor, deduct all but							7.50%	7.50%
0600	Overtime work, by subcontractors, odd							15%	15%
0650	By General Contractor, odd							10%	10%

01 31 13.60 Installing Contractor's Main Office Overhead

0010	INSTALLING CONTRACTOR'S MAIN OFFICE OVERHEAD	R013113-50							
0020	As percent of direct costs, minimum			%				5%	
0050	Average							13%	
0100	Maximum							30%	

01 31 13.80 Overhead and Profit

0010	OVERHEAD & PROFIT Allowance to add to items in this								
0020	book that do not include Subs O&P, overage			%				25%	
0100	Allowance to add to items in this book that								
0110	do include Subs O&P, minimum			%				5%	5%
0150	Average							10%	10%
0200	Maximum							15%	15%
0300	Typical, by size of project, under \$100,000							30%	
0350	\$500,000 project							25%	
0400	\$2,000,000 project							20%	
0450	Over \$10,000,000 project							15%	

01 31 13.90 Performance Bond

0010	PERFORMANCE BOND	R013113-80							
0020	For buildings, minimum			Job				.60%	.60%
0100	Maximum			"				2.50%	2.50%

01 32 Construction Progress Documentation

01 32 13 – Scheduling of work

01 32 13.50 Scheduling

		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SCHEDULING									
0020	Critical path, as % of architectural fee, minimum				%				.50%	.50%
0100	Maximum				"				1%	1%
0300	Computer-update, micro, no plots, minimum				Eo.				455	500
0400	Including plots, maximum				"				1,450	1,600
0600	Rule of thumb, CPM scheduling, small job (\$10 Million)				Job				.05%	.05%
0650	Large job (\$50 Million +)								.03%	.03%
0700	Including cost control, small job								.08%	.08%
0750	Large job								.04%	.04%

01 32 33 – Photographic Documentation

01 32 33.50 Photographs

0010	PHOTOGRAPHS									
0020	8" x 10", 4 shots, 2 prints eo., std. mounting				Set	475			475	525
0100	Hinged linen mounts					530			530	580
0200	8" x 10", 4 shots, 2 prints each, in color					425			425	470
0300	For I.D. slugs, odd to all above					5.30			5.30	5.85
0500	Aerial photos, initial fly-over, 6 shots, 1 print eo., 8" x 10"					865			865	950
0550	11" x 14" prints					980			980	1,075
0600	16" x 20" prints					1,175			1,175	1,300
0700	For full color prints, odd					40%				
0750	Add for traffic control area					305			305	335
0900	For over 30 miles from airport, odd per				Mile	5.55			5.55	6.15
1000	Vertical photography, 4 to 6 shots with									
1010	different scales, 1 print each				Set	1,150			1,150	1,275
1500	Time lapse equipment, camera and projector, buy				Eo.	2,650			2,650	2,925
1550	Rent per month				"	1,600			1,600	1,750
1700	Comeromon and film, including processing, B.&W.				Day	1,225			1,225	1,350
1720	Color				"	1,425			1,425	1,550

01 41 Regulatory Requirements

01 41 26 – Permit Requirements

01 41 26.50 Permits

0010	PERMITS									
0020	Rule of thumb, most cities, minimum				Job				.50%	.50%
0100	Maximum				"				2%	2%

01 45 Quality Control

01 45 23 – Testing and Inspecting Services

01 45 23.50 Testing

0010	TESTING and Inspecting Services									
0015	For concrete building costing \$1,000,000, minimum				Project				4,725	5,200
0020	Maximum								38,000	41,800
0050	Steel building, minimum								4,725	5,200
0070	Maximum								14,800	16,300
0100	For building costing, \$10,000,000, minimum								30,100	33,100
0150	Maximum								48,200	53,000
0200	Asphalt testing, compressive strength Marshall stability, set of 3				Eo.				145	165
0220	Density, set of 3								86	95
0250	Extraction, individual tests on sample								136	150

01 45 Quality Control

01 45 23 – Testing and Inspecting Services

01 45 23.50 Testing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
0300	Penetration				Ea.				41	45
0350	Mix design, 5 specimens								182	200
0360	Additional specimen								36	40
0400	Specific gravity								41	45
0420	Swell test								64	70
0450	Water effect and cohesion, set of 6								182	200
0470	Water effect and plastic flow								64	70
0600	Concrete testing, aggregates, abrasion, ASTM C 131								136	150
0650	Absorption, ASTM C 127								42	46
0800	Petrographic analysis, ASTM C 295								775	850
0900	Specific gravity, ASTM C 127								50	55
1000	Sieve analysis, washed, ASTM C 136								59	65
1050	Unwashed								59	65
1200	Sulfate soundness								114	125
1300	Weight per cubic foot								36	40
1500	Cement, physical tests, ASTM C 150								320	350
1600	Chemical tests, ASTM C 150								245	270
1800	Compressive test, cylinder, delivered to lab, ASTM C 39								12	13
1900	Picked up by lab, minimum								14	15
1950	Average								18	20
2000	Maximum								27	30
2200	Compressive strength, cores (not incl. drilling), ASTM C 42				▼				36	40
2250	Core drilling, 4" diameter (plus technician)				Inch				23	25
2260	Technician for core drilling				Hr.				45	50
2300	Patching core holes				Ea.				22	24
2400	Drying shrinkage at 28 days								236	260
2500	Flexural test beams, ASTM C 78								59	65
2600	Mix design, one batch mix								259	285
2650	Added trial batches								120	132
2800	Modulus of elasticity, ASTM C 469								164	180
2900	Tensile test, cylinders, ASTM C 496								45	50
3000	Water-Cement ratio curve, 3 batches								141	155
3100	4 batches								186	205
3300	Masonry testing, absorption, per 5 brick, ASTM C 67								45	50
3350	Chemical resistance, per 2 brick								50	55
3400	Compressive strength, per 5 brick, ASTM C 67								68	75
3420	Efflorescence, per 5 brick, ASTM C 67								68	75
3440	Imperviousness, per 5 brick								87	96
3470	Modulus of rupture, per 5 brick								86	95
3500	Moisture, block only								32	35
3550	Mortar, compressive strength, set of 3								23	25
4100	Reinforcing steel, bend test								55	61
4200	Tensile test, up to #8 bar								36	40
4220	#9 to #11 bar								41	45
4240	#14 bar and larger								64	70
4400	Soil testing, Atterberg limits, liquid and plastic limits								59	65
4510	Hydrometer analysis								109	120
4530	Specific gravity, ASTM D 354								44	48
4600	Sieve analysis, washed, ASTM D 422								55	60
4700	Unwashed, ASTM D 422								59	65
4710	Consolidation test (ASTM D2435), minimum								250	275
4715	Maximum								430	475
4720	Density and classification of undisturbed sample				▼				73	80

01 45 Quality Control

01 45 23 – Testing and Inspecting Services

01 45 23.50 Testing

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4735	Sail density, nuclear method, ASTM D2922				Ea.				35	38.50
4740	Sand cone method ASTM D1556								27	30
4750	Moisture content, ASTM D 2216								9	10
4780	Permeability test, double ring infiltrometer								500	550
4800	Permeability, var. or constant head, undist., ASTM D 2434								227	250
4850	Recompacted								250	275
4900	Proctor compaction, 4" standard mold, ASTM D 698								123	135
4950	6" modified mold								68	75
5100	Shear tests, triaxial, minimum								410	450
5150	Maximum								545	600
5300	Direct shear, minimum, ASTM D 3080								320	350
5350	Maximum								410	450
5550	Technician for inspection, per day, earthwork								320	350
5650	Bolting								400	440
5750	Roofing								480	530
5790	Welding				▼ Day				480	530
5820	Non-destructive metal testing, dye penetrant				Day				310	340
5840	Magnetic particle								310	340
5860	Radiography								450	495
5880	Ultrasonic								310	340
6000	Welding certification, minimum				Ea.				91	100
6100	Maximum				"				250	275
7000	Underground storage tank									
7500	Valumetric tightness test, <=12,000 gal.				Ea.				435	480
7510	<=30,000 gal.				"				615	675
7600	Vadose zone (soil gas) sampling, 10-40 samples, min.				Day				1,375	1,500
7610	Maximum				"				2,275	2,500
7700	Ground water monitoring incl. drilling 3 wells, min.				Total				4,550	5,000
7710	Maximum				"				6,375	7,000
8000	X-ray concrete slabs				Ea.				182	200
9000	Thermographic testing, for bldg envelope heat loss, average 2,000 S.F.				"					500

01 51 Temporary Utilities

01 51 13 – Temporary Electricity

01 51 13.80 Temporary Utilities

0010	TEMPORARY UTILITIES									
0100	Heat, incl. fuel and operation, per week, 12 hrs. per day	1 Skwk	100	.080	CSF Flr	28	3.78		31.78	36.50
0200	24 hrs. per day	"	60	.133		53.50	6.30		59.80	68.50
0350	Lighting, incl. service lamps, wiring & outlets, minimum	1 Elec	34	.235		2.80	12.55		15.35	22
0360	Maximum	"	17	.471		5.85	25		30.85	44
0400	Power for temp lighting only, 6.6 KWH, per month								.92	1.01
0430	11.8 KWH, per month								1.65	1.82
0450	23.6 KWH, per month								3.30	3.63
0600	Power for job duration incl. elevator, etc., minimum								47	51.50
0650	Maximum								110	121
1000	toilet, portable, see Equip. Rental 01 54 33 in Reference Section									

01 52 Construction Facilities

01 52 13 – Field Offices and Sheds

01 52 13.20 Office and Storage Space		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	OFFICE AND STORAGE SPACE									
0020	Office trailer, furnished, no hookups, 20' x 8', buy	2 Skwk	1	16	Ea.	9,150	755		9,905	11,300
0250	Rent per month					169			169	185
0300	32' x 8', buy	2 Skwk	.70	22.857		14,000	1,075		15,075	17,100
0350	Rent per month					203			203	223
0400	50' x 10', buy	2 Skwk	.60	26.667		22,400	1,250		23,650	26,600
0450	Rent per month					305			305	335
0500	50' x 12', buy	2 Skwk	.50	32		27,000	1,525		28,525	32,100
0550	Rent per month					350			350	385
0700	For air conditioning, rent per month, add					48.50			48.50	53.50
0800	For delivery, odd per mile				Mile	11			11	12.10
0890	Delivery each way				Ea.	200			200	220
0900	Bunk house trailer, 8' x 40' duplex dorm with kitchen, no hookups, buy	2 Carp	1	16		37,300	735		38,035	42,100
0910	9 men with kitchen and bath, no hookups, buy		1	16		38,000	735		38,735	42,900
0920	18 man sleeper with both, no hookups, buy		1	16		49,000	735		49,735	55,000
1000	Portable buildings, prefab, on skids, economy, 8' x 8'		265	.060	S.F.	29.50	2.77		32.27	37
1100	Deluxe, 8' x 12'		150	.107	"	24	4.89		28.89	34
1200	Storage boxes, 20' x 8', buy	2 Skwk	1.80	8.889	Ea.	2,775	420		3,195	3,700
1250	Rent per month					78.50			78.50	86
1300	40' x 8', buy	2 Skwk	1.40	11.429		3,700	540		4,240	4,900
1350	Rent per month					99			99	109
5000	Air supported structures, see Section 13 31 13.13									

01 52 13.40 Field Office Expense

0010	FIELD OFFICE EXPENSE									
0100	Office equipment rental overage				Month	200			200	220
0120	Office supplies, overage				"	75			75	82.50
0125	Office trailer rental, see Section 01 52 13.20									
0140	Telephone bill; avg. bill/month incl. long dist.				Month	81			81	89
0160	Lights & HVAC				"	152			152	167

01 54 Construction Aids

01 54 09 – Protection Equipment

01 54 09.50 Personnel Protective Equipment

0010	PERSONNEL PROTECTIVE EQUIPMENT									
0015	Hazardous waste protection									
0020	Respirator mask only, full face, silicone				Ea.	335			335	370
0030	Half face, silicone					52.50			52.50	58
0040	Respirator cartridges, 2 req'd/mask, dust or asbestos					3.60			3.60	3.95
0050	Chemical vapor					2.78			2.78	3.06
0060	Combination vapor and dust					8.30			8.30	9.10
0100	Emergency escape breathing apparatus, 5 min					550			550	605
0110	10 min					665			665	730
0150	Self contained breathing apparatus with full face piece, 30 min					1,975			1,975	2,175
0160	60 min					3,700			3,700	4,075
0200	Encapsulating suits, limited use, level A					1,775			1,775	1,950
0210	Level B					375			375	415
0300	Over boots, latex				Pr.	7.50			7.50	8.25
0310	PVC					29			29	32
0320	Neoprene					37.50			37.50	41
0400	Gloves, nitrile/PVC					36			36	39.50
0410	Neoprene coated					37			37	41

01 54 Construction Aids

01 54 09 – Protection Equipment

01 54 09.60 Safety Nets

		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SAFETY NETS									
0020	No supports, stock sizes, nylon, 3 1/2" mesh				S.F.	2.96			2.96	3.26
0100	Polypropylene, 6" mesh					1.59			1.59	1.75
0200	Small mesh debris nets, 1/4" mesh, stock sizes					.74			.74	.81
0220	Combined 3 1/2" mesh and 1/4" mesh, stock sizes					4.67			4.67	5.15
0300	Monthly rental, 4" mesh, stock sizes, 1st month					.50			.50	.55
0320	2nd month rental					.25			.25	.28
0340	Maximum rental/year					1.15			1.15	1.27

01 54 16 – Temporary Hoists

01 54 16.50 Weekly Forklift Crew

0010	WEEKLY FORKLIFT CREW									
0100	All-terrain forklift, 45' lift, 35' reach, 9000 lb. capacity	A-3P	.20	40	Week		1,875	2,650	4,525	5,775

01 54 19 – Temporary Cranes

01 54 19.50 Daily Crane Crews

0010	DAILY CRANE CREWS for small jobs, portal to portal									
0100	12-ton truck-mounted hydraulic crane	A-3H	1	8	Day		400	875	1,275	1,575
0200	25-ton	A-3I	1	8			400	1,000	1,400	1,700
0300	40-ton	A-3J	1	8			400	1,250	1,650	1,975
0400	55-ton	A-3K	1	16			750	1,650	2,400	2,975
0500	80-ton	A-3L	1	16			750	2,400	3,150	3,775
0600	100-ton	A-3M	1	16			750	2,375	3,125	3,775
0900	If crane is needed on a Saturday, Sunday or Holiday									
0910	At time-and-a-half, add				Day		50%			
0920	At double time, add				"		100%			

01 54 19.60 Monthly Tower Crane Crew

0010	MONTHLY TOWER CRANE CREW , excludes concrete footing									
0100	Stotic tower crane, 130' high, 106' jib, 6200 lb. capacity	A-3N	.05	176	Month		8,850	24,200	33,050	40,000

01 54 23 – Temporary Scaffolding and Platforms

01 54 23.60 Pump Staging

0010	PUMP STAGING , Aluminum	R015423-20								
0200	24' long pole section, buy				Eo.	355			355	390
0300	18' long pole section, buy					275			275	300
0400	12' long pole section, buy					185			185	204
0500	6' long pole section, buy					103			103	113
0600	6' long splice joint section, buy					72.50			72.50	80
0700	Pump jack, buy					148			148	163
0900	Foldable broce, buy					58			58	64
1000	Workbench/bock safety rail support, buy					78			78	85.50
1100	Scaffolding plonks/workbench, 14" wide x 24' long, buy					715			715	785
1200	Plank end safety rail, buy					291			291	320
1250	Safety net, 22' long, buy					355			355	390
1300	System in place, 50' working height, per use based on 50 uses	2 Carp	84.80	.189	C.S.F.	6.10	8.65		14.75	20
1400	100 uses		84.80	.189		3.06	8.65		11.71	16.70
1500	150 uses		84.80	.189		2.05	8.65		10.70	15.60

01 54 23.70 Scaffolding

0010	SCAFFOLDING	R015423-10								
0015	Steel tube, regular, no plank, labor only to erect & dismantle									
0090	Building exterior, wall face, 1 to 5 stories, 6'-4" x 5' frames	3 Corp	8	3	C.S.F.		138		138	212
0200	6 to 12 stories	4 Corp	8	4			183		183	283
0301	13 to 20 stories	5 Clab	8	5			183		183	283

01 54 Construction Aids

01 54 23 – Temporary Scaffolding and Platforms

01 54 23.70 Scaffolding

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor Equipment	Total	Total Incl O&P
0460	Building interior, wall face oreo, up to 16' high	3 Carp	12	2	C.S.F.		91.50	91.50	142
0560	16' to 40' high		10	2.400	▼		110	110	170
0800	Building interior floor oreo, up to 30' high	▼	150	.160	C.C.F.		7.35	7.35	11.30
0900	Over 30' high	4 Corp	160	.200	"		9.15	9.15	14.15
0906	Complete system for face of walls, no plank, material only rent/mo				C.S.F.	35		35	38.50
0908	Interior spaces, no plank, material only rent/mo				C.C.F.	3.35		3.35	3.68
0910	Steel tubular, heavy duty shoring, buy								
0920	Fromes 5' high 2' wide				Ea.	81.50		81.50	90
0925	5' high 4' wide					93		93	102
0930	6' high 2' wide					93.50		93.50	103
0935	6' high 4' wide				▼	109		109	120
0940	Accessories								
0945	Cross braces				Ea.	15.50		15.50	17.05
0950	U-head, 8" x 8"					19.10		19.10	21
0955	J-head, 4" x 8"					13.90		13.90	15.30
0960	Base plate, 8" x 8"					15.50		15.50	17.05
0965	Leveling jock				▼	33.50		33.50	36.50
1000	Steel tubular, regular, buy								
1100	Fromes 3' high 5' wide				Ea.	72.50		72.50	80
1150	5' high 5' wide					86.50		86.50	95
1200	6'-4" high 5' wide					118		118	129
1350	7'-6" high 6' wide					158		158	173
1500	Accessories cross braces					15.50		15.50	17.05
1550	Guordrail post					16.40		16.40	18.05
1600	Guardrail 7' section					6.30		6.30	6.95
1650	Screw jacks & plates					21.50		21.50	24
1700	Sideorm brackets					25.50		25.50	28.50
1750	8" casters					31		31	34
1800	Plank 2" x 10" x 16'-0"					52		52	57.50
1900	Stairway section					276		276	305
1910	Stairway starter bar					32		32	35
1920	Stairway inside handrail					53		53	58
1930	Stairway outside handrail					81.50		81.50	90
1940	Walk-thru frame guardrail				▼	41.50		41.50	46
2000	Steel tubular, regular, rent/mo.								
2100	Fromes 3' high 5' wide				Ea.	5		5	5.50
2150	5' high 5' wide					5		5	5.50
2200	6'-4" high 5' wide					5.15		5.15	5.65
2250	7'-6" high 6' wide					7		7	7.70
2500	Accessaries, cross braces					1		1	1.10
2550	Guordrail post					1		1	1.10
2600	Guordrail 7' section					1		1	1.10
2650	Screw jacks & plates					2		2	2.20
2700	Sideorm brackets					2		2	2.20
2750	8" casters					8		8	8.80
2800	Outrigger for ralling tower					3		3	3.30
2850	Plank 2" x 10" x 16'-0"					6		6	6.60
2900	Stairway section					35.50		35.50	39
2940	Walk-thru frome guordrail				▼	2.50		2.50	2.75
3000	Steel tubular, heavy duty sharing, rent/ma.								
3250	5' high 2' & 4' wide				Ea.	5		5	5.50
3300	6' high 2' & 4' wide					5		5	5.50
3500	Accessories, cross braces				▼	1		1	1.10

01 54 Construction Aids

01 54 23 – Temporary Scaffolding and Platforms

01 54 23.70 Scaffolding		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3600	U-head, 8" x 8"				Ea.	1			1	1.10
3650	J-head, 4" x 8"					1			1	1.10
3700	Base plate, 8" x 8"					1			1	1.10
3750	Leveling jack					2			2	2.20
5700	Planks, 2" x 10" x 16'-0", labor only to erect & remove to 50' H	3 Carp	72	.333			15.30		15.30	23.50
5800	Over 50' high	4 Carp	80	.400	▼		18.35		18.35	28.50
6000	Heavy duty shoring for elevated slab forms to 8'-2" high, floor area									
6100	Labor only to erect & dismantle	4 Carp	16	2	C.S.F.		91.50		91.50	142
6110	Materials only, rent/mo				"	29.50			29.50	32.50
6500	To 14'-8" high									
6600	Labor only to erect & dismantle	4 Carp	10	3.200	C.S.F.		147		147	226
6610	Materials only, rent/mo				"	43			43	47.50

01 54 23.75 Scaffolding Specialties

0010 SCAFFOLDING SPECIALTIES										
1200	Sidewalk bridge, heavy duty steel posts & beams, including									
1210	porapet protection & waterproofing (material cost is rent/month)									
1220	8' to 10' wide, 2 posts	3 Carp	15	1.600	L.F.	37	73.50		110.50	154
1230	3 posts	"	10	2.400	"	56.50	110		166.50	232
1500	Sidewalk bridge using tubular steel scaffold frames including									
1510	planking (material cost is rent/month)	3 Carp	45	.533	L.F.	5.60	24.50		30.10	43.50
1600	For 2 uses per month, deduct from all above					50%				
1700	For 1 use every 2 months, add to all above					100%				
1900	Catwalks, 20" wide, no guardrails, 7' span, buy				Eo.	133			133	146
2000	10' span, buy					186			186	205
3720	Putlog, standard, 8' span, with hangers, buy					66.50			66.50	73
3730	Rent per month					10			10	11
3750	12' span, buy					99			99	109
3755	Rent per month					15			15	16.50
3760	Trussed type, 16' span, buy					229			229	252
3770	Rent per month					20			20	22
3790	22' span, buy					274			274	300
3795	Rent per month					30			30	33
3800	Rolling ladders with handrails, 30" wide, buy, 2 step					231			231	254
4000	7 step					760			760	835
4050	10 step					1,050			1,050	1,150
4100	Rolling towers, buy, 5' wide, 7' long, 10' high					1,150			1,150	1,275
4200	For 5' high added sections, to buy, add				▼	204			204	224
4300	Complete incl. wheels, railings, outriggers,									
4350	21' high, to buy				Ea.	1,975			1,975	2,175
4400	Rent/month = 5% of purchase cost				"	170			170	187
5000	Motorized work platform, mast climber									
5050	Base unit, 50' W, less than 100' tall, rent/mo				Ea.	3,100			3,100	3,400
5100	Less than 200' tall, rent/mo					3,900			3,900	4,300
5150	Less than 300' tall, rent/mo					4,575			4,575	5,050
5200	Less than 400' tall, rent/mo				▼	5,200			5,200	5,700
5250	Set up and demab, per unit, less than 100' tall	B-68F	16.60	1.446	C.S.F.		69.50	19.55	89.05	129
5300	Less than 200' tall		25	.960			46	13	59	86
5350	Less than 300' tall		30	.800			38.50	10.80	49.30	71.50
5400	Less than 400' tall		33	.727	▼		35	9.85	44.85	65
5500	Mobilization (price includes freight in and out) per unit				Ea.				1,100	1,225

01 54 Construction Aids

01 54 23 – Temporary Scaffolding and Platforms

01 54 23.80 Staging Aids				Daily Crew Output	Labar- Hours	Unit	Material	2014 Bare Costs Labar Equipment	Total	Total Incl O&P
0010	STAGING AIDS and fall protection equipment									
0100	Sidewall staging bracket, tubular, buy					Eo.	51		51	56
0110	Cost each per day, based on 250 days use					Day	.20		.20	.22
0200	Guord post, buy					Eo.	48		48	53
0210	Cost each per day, based on 250 days use					Day	.19		.19	.21
0300	End guord choins, buy per pair					Poir	36		36	39.50
0310	Cost per set per day, based on 250 days use					Day	.20		.20	.22
1000	Roof shingling bracket, steel, buy					Eo.	8.90		8.90	9.80
1010	Cost each per day, based on 250 days use					Day	.04		.04	.04
1100	Wood bracket, buy					Eo.	16.80		16.80	18.50
1110	Cost each per day, based on 250 days use					Day	.07		.07	.07
2000	Lodder jock, aluminum, buy per pair					Poir	118		118	130
2010	Cost per pair per day, based on 250 days use					Day	.47		.47	.52
2100	Steel sideroil jock, buy per pair					Poir	97.50		97.50	107
2110	Cost per pair per day, based on 250 days use					Day	.39		.39	.43
3000	Laminated wood plank, 2" x 10" x 16', buy					Eo.	52		52	57.50
3010	Cost each per day, based on 250 days use					Day	.21		.21	.23
3100	Aluminum scaffolding plank, 20" wide x 24' long, buy					Eo.	820		820	900
3110	Cost each per day, based on 250 days use					Day	3.28		3.28	3.60
4000	Nylon full body harness, lanyard and rope grab					Eo.	176		176	193
4010	Cost each per day, based on 250 days use					Day	.70		.70	.77
4100	Rope for safety line, 5/8" x 100' nylon, buy					Eo.	56		56	61.50
4110	Cost each per day, based on 250 days use					Day	.22		.22	.25
4200	Permonent U-Bolt roof anchor, buy					Eo.	30		30	33
4300	Temporary (one use) roof ridge anchor, buy					"	32		32	35.50
5000	Instollotion (setup and removal) of staging aids									
5010	Sidewall staging bracket	2 Corp	64	.250		Eo.		11.45	11.45	17.70
5020	Guord post with 2 wood roils	"	64	.250				11.45	11.45	17.70
5030	End guord choins, set	1 Corp	64	.125				5.75	5.75	8.85
5100	Roof shingling bracket		96	.083				3.82	3.82	5.90
5200	Lodder jock		64	.125				5.75	5.75	8.85
5300	Wood plank, 2" x 10" x 16'	2 Corp	80	.200				9.15	9.15	14.15
5310	Aluminum scaffold plank, 20" x 24'	"	40	.400				18.35	18.35	28.50
5410	Safety rope	1 Corp	40	.200				9.15	9.15	14.15
5420	Permonent U-Bolt roof anchor (install only)	2 Corp	40	.400				18.35	18.35	28.50
5430	Temporary roof ridge anchor (install only)	1 Corp	64	.125				5.75	5.75	8.85

01 54 26 – Temporary Swing Staging

01 54 26.50 Swing Staging

0010	SWING STAGING , 500 lb. cop., 2' wide to 24' long, hond operated									
0020	steel coble type, with 60' cibles, buy					Eo.	4,900		4,900	5,375
0030	Rent per month					"	490		490	540
0600	Lightweight (not for mosons) 24' long for 150' height,									
0610	monuol type, buy					Eo.	10,200		10,200	11,200
0620	Rent per month						1,025		1,025	1,125
0700	Powered, electric or oir, to 150' high, buy						25,600		25,600	28,200
0710	Rent per month						1,800		1,800	1,975
0780	To 300' high, buy						26,000		26,000	28,600
0800	Rent per month						1,825		1,825	2,000
1000	Bosun's choir or work basket 3' x 3.5', to 300' high, electric, buy						10,400		10,400	11,400
1010	Rent per month						730		730	800
2200	Move swing staging (setup ond remove)	E-4	2	16	Move		825	71	896	1,525

01 54 Construction Aids

01 54 36 – Equipment Mobilization

01 54 36.50 Mobilization

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	MOBILIZATION (Use line item again for demobilization)									
0015	Up to 25 mi. haul dist. (50 mi. RT for mob/demob crew)									
0020	Dozer, loader, backhoe, excav., grader, paver, roller, 70 to 150 H.P.	B-34N	4	2	Eq.		75	142	217	272
0100	Above 150 HP	B-34K	3	2.667			100	320	420	510
0300	Scrapper, towed type (incl. tractor), 6 C.Y. capacity		3	2.667			100	320	420	510
0400	10 C.Y.		2.50	3.200			120	385	505	610
0600	Self-propelled scrapper, 15 C.Y.		2.50	3.200			120	385	505	610
0700	24 C.Y.		2	4			150	480	630	760
0900	Shovel or dragline, 3/4 C.Y.		3.60	2.222			83.50	267	350.50	420
1000	1-1/2 C.Y.		3	2.667			100	320	420	510
1100	Small equipment, placed in rear of, or towed by pickup truck	A-3A	8	1			36.50	21	57.50	78.50
1150	Equip up to 70 HP, on flatbed trailer behind pickup truck	A-3D	4	2			73	70.50	143.50	189
2000	Crane, truck-mounted, up to 75 ton, (driver only, one-way)	1 Eqhv	7.20	1.111			56		56	84.50
2100	Crane, truck-mounted, over 75 ton	A-3E	2.50	6.400			281	67.50	348.50	500
2200	Crawler-mounted, up to 75 ton	A-3F	2	8			350	500	850	1,075
2300	Over 75 ton	A-3G	1.50	10.667			470	755	1,225	1,550
2500	For each additional 5 miles haul distance, add						10%	10%		
3000	For large pieces of equipment, allow for assembly/knockdown									
3001	For mob/demob of vibrofloatation equip, see Section 31 45 13.10									
3100	For mob/demob of micro-tunneling equip, see Section 33 05 23.19									
3200	For mob/demob of pile driving equip, see Section 31 62 19.10									
3300	For mob/demob of coisson drilling equip, see Section 31 63 26.13									

01 54 39 – Construction Equipment

01 54 39.70 Small Tools

0010	SMALL TOOLS									
0020	As % of contractor's bare labor cost for project, minimum				Total		.50%			
0100	Maximum				"		2%			

01 55 Vehicular Access and Parking

01 55 23 – Temporary Roads

01 55 23.50 Roads and Sidewalks

0010	ROADS AND SIDEWALKS Temporary									
0050	Roads, gravel fill, no surfacing, 4" gravel depth	B-14	715	.067	S.Y.	3.98	2.60	.51	7.09	8.95
0100	8" gravel depth	"	615	.078	"	7.95	3.02	.59	11.56	14.05
1000	Romp, 3/4" plywood on 2" x 6" joists, 16" O.C.	2 Corp	300	.053	S.F.	1.44	2.45		3.89	5.35
1100	On 2" x 10" joists, 16" O.C.	"	275	.058	"	1.99	2.67		4.66	6.30

01 56 Temporary Barriers and Enclosures

01 56 13 – Temporary Air Barriers

01 56 13.60 Tarpaulins

0010	TARPAULINS									
0020	Cotton duck, 10 oz. to 13.13 oz. per S.Y., 6'x8'				S.F.	.75			.75	.83
0050	30'x30'					.43			.43	.47
0100	Polyvinyl coated nylon, 14 oz. to 18 oz., minimum					1.30			1.30	1.43
0150	Maximum					1.19			1.19	1.31
0200	Reinforced polyethylene 3 mils thick, white					.03			.03	.03
0300	4 mils thick, white, clear or black					.09			.09	.10
0400	5.5 mils thick, clear					.17			.17	.19

01 56 Temporary Barriers and Enclosures

01 56 13 – Temporary Air Barriers

01 56 13.60 Tarpaulins		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0500	White, fire retardant				S.F.	.41			.41	.45
0600	12 mils, oil resistant, fire retardant					.27			.27	.30
0700	8.5 mils, black					.57			.57	.63
0710	Woven polyethylene, 6 mils thick					.17			.17	.19
0730	Polyester reinforced w/integral fastening system 11 mils thick					.24			.24	.26
0740	Mylor polyester, non-reinforced, 7 mils thick					1.17			1.17	1.29

01 56 13.90 Winter Protection

0010	WINTER PROTECTION									
0100	Froming to close openings	2 Clob	500	.032	S.F.	.41	1.17		1.58	2.26
0200	Tarpaulins hung over scaffolding, 8 uses, not incl. scaffolding		1500	.011		.25	.39		.64	.88
0250	Tarpaulin polyester reinf. w/integral fastening system 11 mils thick		1600	.010		.24	.37		.61	.83
0300	Prefab fiberglass panels, steel frame, 8 uses		1200	.013		2.20	.49		2.69	3.17

01 56 16 – Temporary Dust Barriers

01 56 16.10 Dust Barriers, Temporary

0010	DUST BARRIERS, TEMPORARY									
0020	Spring loaded telescoping pole & head, to 12', erect and dismantle	1 Clob	240	.033	Ea.		1.22		1.22	1.88
0025	Cost per day (based upon 250 days)				Day	.24			.24	.26
0030	To 21', erect and dismantle	1 Clob	240	.033	Ea.		1.22		1.22	1.88
0035	Cost per day (based upon 250 days)				Day	.38			.38	.42
0040	Accessories, caution tape reel, erect and dismantle	1 Clob	480	.017	Ea.		.61		.61	.94
0045	Cost per day (based upon 250 days)				Day	.36			.36	.40
0060	Foam roll and connector, erect and dismantle	1 Clob	240	.033	Ea.		1.22		1.22	1.88
0065	Cost per day (based upon 250 days)				Day	.10			.10	.11
0070	Caution tape	1 Clob	384	.021	C.L.F.	2.70	.76		3.46	4.15
0080	Zipper, standard duty		60	.133	Ea.	15.95	4.89		20.84	25
0090	Heavy duty		48	.167	"	18.90	6.10		25	30.50
0100	Polyethylene sheet, 4 mil		37	.216	Sq.	2.91	7.90		10.81	15.45
0110	6 mil		37	.216	"	3.98	7.90		11.88	16.65
1000	Dust partition, 6 mil polyethylene, 1" x 3" frame	2 Carp	2000	.008	S.F.	.29	.37		.66	.89
1080	2" x 4" frame	"	2000	.008	"	.32	.37		.69	.92

01 56 23 – Temporary Barricades

01 56 23.10 Barricades

0010	BARRICADES									
0020	5' high, 3 rail @ 2" x 8", fixed	2 Carp	20	.800	L.F.	5.75	36.50		42.25	63
0150	Movable	"	30	.533	"	4.77	24.50		29.27	43
0300	Stock units, 6' high, 8' wide, plain, buy				Ea.	390			390	430
0350	With reflective tape, buy				"	405			405	445
0400	Break-a-way 3" PVC pipe barricade									
0410	with 3 ea. 1' x 4' reflectorized panels, buy				Ea.	128			128	141
0500	Plywood with steel legs, 24" wide					59			59	65
0600	Warning signal flag tree, 11' high, 2 flags, buy					238			238	262
0800	Traffic canes, PVC, 18" high					11			11	12.10
0850	28" high					18.60			18.60	20.50
1000	Guardrail, wooden, 3' high, 1" x 6", an 2" x 4" posts	2 Carp	200	.080	L.F.	1.29	3.67		4.96	7.05
1100	2" x 6", an 4" x 4" posts	"	165	.097		2.35	4.45		6.80	9.45
1200	Portable metal with base pads, buy					15.55			15.55	17.10
1250	Typical installation, assume 10 reuses	2 Carp	600	.027		2.55	1.22		3.77	4.70
1300	Barricade tape, polyethylene, 7 mil, 3" wide x 500' long roll				Ea.	25			25	27.50
3000	Detour signs, set up and remove									
3010	Reflective aluminum, MUTCD, 24" x 24", post mounted	1 Clob	20	.400	Ea.	2.35	14.65		17	25
5000	Barricades, see Section 01 54 33.40									

01 56 Temporary Barriers and Enclosures

01 56 26 – Temporary Fencing

01 56 26.50 Temporary Fencing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	TEMPORARY FENCING									
0020	Chain link, 11 go., 4' high	2 Clob	400	.040	L.F.	2.95	1.47		4.42	5.50
0100	6' high		300	.053		2.95	1.95		4.90	6.25
0200	Rented chain link, 6' high, to 1000' (up to 12 mo.)		400	.040		4.39	1.47		5.86	7.10
0250	Over 1000' (up to 12 mo.)	▼	300	.053		4.29	1.95		6.24	7.75
0350	Plywood, painted, 2" x 4" frame, 4' high	A-4	135	.178		6.25	7.80		14.05	18.75
0400	4" x 4" frame, 8' high	"	110	.218		11.45	9.55		21	27
0500	Wire mesh on 4" x 4" posts, 4' high	2 Corp	100	.160		9.75	7.35		17.10	22
0550	8' high	"	80	.200		14.70	9.15		23.85	30.50

01 56 29 – Temporary Protective Walkways

01 56 29.50 Protection										
0010	PROTECTION									
0020	Stair tread, 2" x 12" planks, 1 use	1 Corp	75	.107	Tread	4.57	4.89		9.46	12.60
0100	Exterior plywood, 1/2" thick, 1 use		65	.123		1.79	5.65		7.44	10.65
0200	3/4" thick, 1 use		60	.133		2.64	6.10		8.74	12.35
2200	Sidewalks, 2" x 12" planks, 2 uses		350	.023	S.F.	.76	1.05		1.81	2.46
2300	Exterior plywood, 2 uses, 1/2" thick		750	.011		.30	.49		.79	1.08
2400	5/8" thick		650	.012		.37	.56		.93	1.28
2500	3/4" thick	▼	600	.013	▼	.44	.61		1.05	1.42

01 56 32 – Temporary Security

01 56 32.50 Watchman										
0010	WATCHMAN									
0020	Service, monthly basis, uniformed person, minimum				Hr.				25	27.50
0100	Maximum								45.50	50
0200	Person and command dog, minimum								31	34
0300	Maximum				▼				54.50	60
0500	Sentry dog, leased, with job patrol (yard dog), 1 dog				Week				290	320
0600	2 dogs				"				390	430
0800	Purchase, trained sentry dog, minimum				Eq.				1,375	1,500
0900	Maximum				"				2,725	3,000

01 58 Project Identification

01 58 13 – Temporary Project Signage

01 58 13.50 Signs										
0010	SIGNS									
0020	High intensity reflectorized, no posts, buy				S.F.	31.50			31.50	34.50

01 71 Examination and Preparation

01 71 23 – Field Engineering

01 71 23.13 Construction Layout										
0010	CONSTRUCTION LAYOUT									
1100	Crew for layout of building, trenching or pipe laying, 2 person crew	A-6	1	16	Doy		730	71.50	801.50	1,200
1200	3 person crew	A-7	1	24			1,200	71.50	1,271.50	1,925
1400	Crew for roadway layout, 4 person crew	A-8	1	32			1,575	71.50	1,646.50	2,475
01 71 23.19 Surveyor Stakes										
0010	SURVEYOR STAKES									
0020	Hardwood, 1" x 1" x 48" long				C	66			66	72.50

01 71 Examination and Preparation

01 71 23 – Field Engineering

01 71 23.19 Surveyor Stakes

		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0100	2" x 2" x 18" long				C	74			74	81.50
0150	2" x 2" x 24" long					130			130	143

01 74 Cleaning and Waste Management

01 74 13 – Progress Cleaning

01 74 13.20 Cleaning Up

0010 CLEANING UP

0020	After job completion, allow, minimum				Job				.30%	.30%
0040	Maximum				"				1%	1%
0050	Cleanup of floor area, continuous, per day, during const.	A-5	24	.750	M.S.F.	.81	27.50	2.81	31.12	46.50
0100	Final by GC at end of job	"	11.50	1.565	"	.86	57.50	5.85	64.21	96
0200	Rubbish removal, see Section 02 41 19.19									

01 76 Protecting Installed Construction

01 76 13 – Temporary Protection of Installed Construction

01 76 13.20 Temporary Protection

0010 TEMPORARY PROTECTION

0020	Flooring, 1/8" tempered hardboard, topped seams	2 Corp	1500	.011	S.F.	.39	.49		.88	1.18
0030	Peel away carpet protection	1 Clob	3200	.003	"	.11	.09		.20	.26

01 91 Commissioning

01 91 13 – General Commissioning Requirements

01 91 13.50 Building Commissioning

0010 BUILDING COMMISSIONING

0100	Basic building commissioning, minimum				%				.25%	.25%
0150	Maximum								.50%	.50%
0200	Enhanced building commissioning, minimum								.50%	.50%
0250	Maximum				▼				1%	1%

Division Notes

[illegible]

Estimating Tips

02 30 00 Subsurface Investigation

In preparing estimates on structures involving earthwork or foundations, all information concerning soil characteristics should be obtained. Look particularly for hazardous waste, evidence of prior dumping of debris, and previous stream beds.

02 40 00 Demolition and Structure Moving

The costs shown for selective demolition do not include rubbish handling or disposal. These items should be estimated separately using RSMeans data or other sources.

- Historic preservation often requires that the contractor remove materials from the existing structure, rehab them, and replace them. The estimator must be aware of any related measures and precautions that must be taken when doing selective demolition and cutting and patching. Requirements may include special handling and storage, as well as security.

- In addition to Subdivision 02 41 00, you can find selective demolition items in each division. Example: Roofing demolition is in Division 7.

02 40 00 Building Deconstruction

This section provides costs for the careful dismantling and recycling of most of low-rise building materials.

02 50 00 Containment of Hazardous Waste

This section addresses on-site hazardous waste disposal costs.

02 80 00 Hazardous Material Disposal/Remediation

This subdivision includes information on hazardous waste handling, asbestos remediation, lead remediation, and mold remediation. See reference R028213-20 and R028319-60 for further guidance in using these unit price lines.

02 90 00 Monitoring Chemical Sampling, Testing Analysis

This section provides costs for on-site sampling and testing hazardous waste.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

02 21 Surveys

02 21 13 – Site Surveys

02 21 13.09 Topographical Surveys

0010	TOPOGRAPHICAL SURVEYS	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0020	Topographical surveying, conventional, minimum	A-7	3.30	7.273	Acre	19.20	365	21.50	405.70	610
0100	Maximum	A-8	.60	53.333	"	58.50	2,600	119	2,777.50	4,200

02 21 13.13 Boundary and Survey Markers

0010	BOUNDARY AND SURVEY MARKERS									
0300	Lot location and lines, large quantities, minimum	A-7	2	12	Acre	34	605	35.50	674.50	1,000
0320	Average	"	1.25	19.200		54	970	57	1,081	1,600
0400	Small quantities, maximum	A-8	1	32		71.50	1,575	71.50	1,718	2,550
0600	Monuments, 3' long	A-7	10	2.400	Eq.	34	121	7.15	162.15	231
0800	Property lines, perimeter, cleared land	"	1000	.024	L.F.	.04	1.21	.07	1.32	1.98
0900	Wooded land	A-8	875	.037	"	.06	1.79	.08	1.93	2.90

02 21 13.16 Aerial Surveys

0010	AERIAL SURVEYS									
1500	Aerial surveying, including ground control, minimum fee, 10 acres				Total					4,700
1510	100 acres									9,400
1550	From existing photography, deduct									1,625
1600	2' contours, 10 acres				Acre					470
1850	100 acres									94
2000	1000 acres									90
2050	10,000 acres									85

02 32 Geotechnical Investigations

02 32 13 – Subsurface Drilling and Sampling

02 32 13.10 Boring and Exploratory Drilling

0010	BORING AND EXPLORATORY DRILLING									
0020	Borings, initial field stake out & determination of elevations	A-6	1	16	Day		730	71.50	801.50	1,200
0100	Drawings showing boring details				Total		335		335	425
0200	Report and recommendations from P.E.						775		775	970
0300	Mobilization and demobilization	B-55	4	6	▼		220	280	500	650
0350	For over 100 miles, per odd mile		450	.053	Mile		1.95	2.49	4.44	5.75
0600	Auger holes in earth, no samples, 2-1/2" diameter		78.60	.305	L.F.		11.20	14.25	25.45	33
0650	4" diameter		67.50	.356			13	16.60	29.60	38.50
0800	Cased borings in earth, with samples, 2-1/2" diameter		55.50	.432		22	15.85	20	57.85	70.50
0850	4" diameter		32.60	.736		33.50	27	34.50	95	116
1000	Drilling in rock, "BX" core, no sampling	B-56	34.90	.458			19.20	46	65.20	80
1050	With casing & sampling		31.70	.505		22	21	50.50	93.50	113
1200	"NX" core, no sampling		25.92	.617			26	62	88	108
1250	With casing and sampling	▼	25	.640	▼	26	27	64.50	117.50	141
1400	Borings, earth, drill rig and crew with truck mounted auger	B-55	1	24	Day		880	1,125	2,005	2,575
1450	Rock using crawler type drill	B-56	1	16	"		670	1,600	2,270	2,800
1500	For inner city borings odd, minimum								10%	10%
1510	Maximum								20%	20%

02 32 19 – Exploratory Excavations

02 32 19.10 Test Pits

0010	TEST PITS									
0020	Hand digging, light soil	1 Clob	4.50	1.778	C.Y.		65		65	101
0100	Heavy soil	"	2.50	3.200			117		117	181
0120	Loader-backhoe, light soil	B-11M	28	.571			24.50	14.20	38.70	53
0130	Heavy soil	"	20	.800	▼		34	19.90	53.90	74.50
1000	Subsurface exploration, mobilization				Mile				6.75	8.40

02 32 Geotechnical Investigations

02 32 19 – Exploratory Excavations

02 32 19.10 Test Pits		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1010	Difficult access for rig, odd				Hr.				260	320
1020	Auger borings, drill rig, incl. samples				L.F.				26.50	33
1030	Hand auger								31.50	40
1050	Drill and sample every 5', split spoon								31.50	40
1060	Extra samples				Eq.				36	45.50

02 41 Demolition

02 41 13 – Selective Site Demolition

02 41 13.15 Hydrodemolition

0010	HYDRODEMOLITION	R024119-10								
0015	Hydrodemolition, concrete pavement, 4000 PSI, 2" depth		B-5	500	.112	S.F.	4.53	2.85	7.38	10.10
0120	4" depth			450	.124		5.05	3.17	8.22	11.20
0130	6" depth			400	.140		5.65	3.56	9.21	12.60
0410	6000 PSI, 2" depth			410	.137		5.50	3.47	8.97	12.25
0420	4" depth			350	.160		6.45	4.07	10.52	14.40
0430	6" depth			300	.187		7.55	4.75	12.30	16.80
0510	8000 PSI, 2" depth			330	.170		6.85	4.32	11.17	15.25
0520	4" depth			280	.200		8.10	5.10	13.20	18
0530	6" depth			240	.233		9.45	5.95	15.40	21

02 41 13.17 Demolish, Remove Pavement and Curb

0010	DEMOLISH, REMOVE PAVEMENT AND CURB	R024119-10								
5010	Pavement removal, bituminous roads, up to 3" thick		B-38	690	.058	S.Y.	2.41	1.86	4.27	5.75
5050	4" to 6" thick			420	.095		3.96	3.05	7.01	9.40
5100	Bituminous driveways			640	.063		2.60	2	4.60	6.20
5200	Concrete to 6" thick, hydraulic hammer, mesh reinforced			255	.157		6.50	5	11.50	15.50
5300	Rod reinforced			200	.200		8.30	6.40	14.70	19.80
5400	Concrete, 7" to 24" thick, plain			33	1.212	C.Y.	50.50	39	89.50	120
5500	Reinforced			24	1.667	"	69.50	53.50	123	165
5600	With hand held air equipment, bituminous, to 6" thick		B-39	1900	.025	S.F.	.98	.12	1.10	1.64
5700	Concrete to 6" thick, no reinforcing			1600	.030		1.16	.15	1.31	1.95
5800	Mesh reinforced			1400	.034		1.33	.17	1.50	2.22
5900	Rod reinforced			765	.063		2.43	.31	2.74	4.08
6000	Curbs, concrete, plain		B-6	360	.067	L.F.	2.67	1.01	3.68	5.20
6100	Reinforced			275	.087		3.50	1.33	4.83	6.80
6200	Granite			360	.067		2.67	1.01	3.68	5.20
6300	Bituminous			528	.045		1.82	.69	2.51	3.55

02 41 13.33 Minor Site Demolition

0010	MINOR SITE DEMOLITION	R024119-10								
0015	No hauling, oblong catch basin or manhole		B-6	7	3.429	Eq.	138	52	190	269
0020	Remove existing catch basin or manhole, masonry			4	6		241	91.50	332.50	470
0030	Catch basin or manhole frames and covers, stored			13	1.846		74	28	102	145
0040	Remove and reset			7	3.429		138	52	190	269
0100	Roadside delineators, remove only		B-80	175	.183		7.25	4.33	11.58	15.85
0110	Remove and reset		"	100	.320		12.70	7.60	20.30	28
0800	Guardrail, corrugated steel, remove only		B-80A	100	.240	L.F.	8.80	3.33	12.13	17.20
0850	Remove and reset		"	40	.600	"	22	8.35	30.35	43
0860	Guide posts, remove only		B-80B	120	.267	Eq.	10.45	2.07	12.52	18.35
0870	Remove and reset		B-55	50	.480		17.55	22.50	40.05	51.50
0900	Hydrants, fire, remove only		B-21A	5	8		365	96	461	665
0950	Remove and reset		"	2	20		915	241	1,156	1,675

02 41 Demolition

02 41 13 – Selective Site Demolition

02 41 13.33 Minor Site Demolition		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1000	Masonry walls, block, solid	B-5	1800	.031	C.F.		1.26	.79	2.05	2.80
1200	Brick, solid		900	.062			2.52	1.58	4.10	5.60
1400	Stone, with mortar		900	.062			2.52	1.58	4.10	5.60
1500	Dry set		1500	.037			1.51	.95	2.46	3.36
1600	Median barrier, precast concrete, remove and store	B-3	430	.112	L.F.		4.39	6	10.39	13.35
1610	Remove and reset	"	390	.123			4.84	6.60	11.44	14.65
2900	Pipe removal, sewer/water, no excavation, 12" diameter	B-6	175	.137			5.50	2.09	7.59	10.75
2930	15"-18" diameter	B-12Z	150	.160			6.60	10.90	17.50	22
2960	21"-24" diameter		120	.200			8.25	13.65	21.90	27.50
3000	27"-36" diameter		90	.267			11	18.20	29.20	37
3200	Steel, welded connections, 4" diameter	B-6	160	.150			6	2.28	8.28	11.70
3300	10" diameter	"	80	.300			12.05	4.57	16.62	23.50
3500	Railroad track removal, ties and track	B-13	330	.170			6.75	2.26	9.01	12.90
3600	Ballast	B-14	500	.096	C.Y.		3.72	.73	4.45	6.50
3700	Remove and re-install, ties & track using new bolts & spikes		50	.960	L.F.		37	7.30	44.30	65
3800	Turnouts using new bolts and spikes		1	48	Eq.		1,850	365	2,215	3,250
4000	Sidewalk removal, bituminous, 2" thick	B-6	350	.069	S.Y.		2.75	1.04	3.79	5.35
4010	2-1/2" thick		325	.074			2.96	1.12	4.08	5.80
4050	Brick, set in mortar		185	.130			5.20	1.97	7.17	10.15
4100	Concrete, plain, 4"		160	.150			6	2.28	8.28	11.70
4110	Plain, 5"		140	.171			6.90	2.61	9.51	13.40
4120	Plain, 6"		120	.200			8	3.04	11.04	15.65
4200	Mesh reinforced, concrete, 4"		150	.160			6.40	2.44	8.84	12.55
4210	5" thick		131	.183			7.35	2.79	10.14	14.30
4220	6" thick		112	.214			8.60	3.26	11.86	16.75
4300	Slab on grade removal, plain	B-5	45	1.244	C.Y.		50.50	31.50	82	112
4310	Mesh reinforced		33	1.697			68.50	43	111.50	153
4320	Rebar reinforced		25	2.240			90.50	57	147.50	202
4400	For congested sites or small quantities, add up to								200%	200%
4450	For disposal on site, add	B-11A	232	.069			2.95	5.70	8.65	10.80
4500	To 5 miles, add	B-34D	76	.105			3.95	9.90	13.85	16.95

02 41 13.60 Selective Demolition Fencing

0010	SELECTIVE DEMOLITION FENCING	R024119-10								
1600	Fencing, barbed wire, 3 strand	2 Clab	430	.037	L.F.		1.36		1.36	2.10
1650	5 strand	"	280	.057			2.09		2.09	3.23
1700	Chain link, posts & fabric, 8' to 10' high, remove only	B-6	445	.054			2.16	.82	2.98	4.22
1750	Remove and reset	"	70	.343			13.75	5.20	18.95	27

02 41 16 – Structure Demolition

02 41 16.13 Building Demolition

0010	BUILDING DEMOLITION Large urban projects, incl. 20 mi. haul	R024119-10								
0011	No foundation or dump fees, C.F. is vol. of building standing									
0020	Steel	B-8	21500	.003	C.F.		.12	.15	.27	.36
0050	Concrete		15300	.004			.17	.22	.39	.50
0080	Masonry		20100	.003			.13	.17	.30	.38
0100	Mixture of types		20100	.003			.13	.17	.30	.38
0500	Small bldgs, or single bldgs, no salvage included, steel	B-3	14800	.003			.13	.17	.30	.39
0600	Concrete		11300	.004			.17	.23	.40	.51
0650	Masonry		14800	.003			.13	.17	.30	.39
0700	Wood		14800	.003			.13	.17	.30	.39
0750	For buildings with no interior walls, deduct								50%	50%
1000	Demolition single family house, one story, w/ 1600 S.F.	B-3	1	48	Eq.		1,900	2,575	4,475	5,725
1020	3200 S.F.		.50	96			3,775	5,150	8,925	11,500

02 41 Demolition

02 41 16 – Structure Demolition

02 41 16.13 Building Demolition		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs			Total Incl O&P
							Labor	Equipment	Total	
1200	Demoliton two family house, two story, wood 2400 S.F.	B-3	.67	71.964	Eo.		2,825	3,850	6,675	8,575
1220	4200 S.F.		.38	128			5,025	6,875	11,900	15,300
1300	Demoliton three family house, three story, wood 3200 S.F.		.50	96			3,775	5,150	8,925	11,500
1320	5400 S.F.		.30	160			6,300	8,575	14,875	19,100
5000	For buildings with no interior wolls, deduct								50%	50%

02 41 16.15 Explosive/Implosive Demolition

0010	EXPLOSIVE/IMPLOSIVE DEMOLITION	R024119-10								
0011	Large projects,									
0020	No disposal fee based on building volume, steel building	B-5B	16900	.003	C.F.		.12	.17	.29	.38
0100	Concrete building		16900	.003			.12	.17	.29	.38
0200	Masonry building	▼	16900	.003	▼		.12	.17	.29	.38
0400	Disposal of material, minimum	B-3	445	.108	C.Y.		4.24	5.80	10.04	12.85
0500	Maximum	"	365	.132	"		5.15	7.05	12.20	15.65

02 41 16.17 Building Demolition Footings and Foundations

0010	BUILDING DEMOLITION FOOTINGS AND FOUNDATIONS	R024119-10								
0200	Floors, concrete slab on grade,									
0240	4" thick, plain concrete	B-9	500	.080	S.F.		2.96	.47	3.43	5.10
0280	Reinforced, wire mesh		470	.085			3.15	.50	3.65	5.40
0300	Rods		400	.100			3.71	.58	4.29	6.35
0400	6" thick, plain concrete		375	.107			3.95	.62	4.57	6.80
0420	Reinforced, wire mesh		340	.118			4.36	.69	5.05	7.50
0440	Rods	▼	300	.133	▼		4.94	.78	5.72	8.45
1000	Footings, concrete, 1' thick, 2' wide	B-5	300	.187	L.F.		7.55	4.75	12.30	16.80
1080	1'-6" thick, 2' wide		250	.224			9.05	5.70	14.75	20
1120	3' wide		200	.280			11.30	7.10	18.40	25
1140	2' thick, 3' wide	▼	175	.320			12.95	8.15	21.10	29
1200	Average reinforcing, odd								10%	10%
1220	Heavy reinforcing, odd				▼				20%	20%
2000	Walls, block, 4" thick	1 Clob	180	.044	S.F.		1.63		1.63	2.51
2040	6" thick		170	.047			1.72		1.72	2.66
2080	8" thick		150	.053			1.95		1.95	3.02
2100	12" thick	▼	150	.053			1.95		1.95	3.02
2200	For horizontal reinforcing, odd								10%	10%
2220	For vertical reinforcing, odd								20%	20%
2400	Concrete, plain concrete, 6" thick	B-9	160	.250			9.25	1.46	10.71	15.90
2420	8" thick		140	.286			10.60	1.67	12.27	18.20
2440	10" thick		120	.333			12.35	1.95	14.30	21
2500	12" thick	▼	100	.400			14.80	2.34	17.14	25.50
2600	For overage reinforcing, odd								10%	10%
2620	For heavy reinforcing, odd								20%	20%
4000	For congested sites or small quantities, odd up to								200%	200%
4200	Add for disposal, on site	B-11A	232	.069	C.Y.		2.95	5.70	8.65	10.80
4250	To five miles	B-30	220	.109	"		4.51	11	15.51	18.95

02 41 19 – Selective Demolition

02 41 19.13 Selective Building Demolition

0010	SELECTIVE BUILDING DEMOLITION									
0020	Costs related to selective demolition of specific building components									
0025	are included under Common Work Results (XX 05)									
0030	in the component's appropriate division.									

02 41 Demolition

02 41 19 – Selective Demolition

02 41 19.16 Selective Demolition, Cutout				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	SELECTIVE DEMOLITION, CUTOUT			R024119-10								
0020	Concrete, elev. slab, light reinforcement, under 6 C.F.	B-9	65	.615	C.F.				23	3.59	26.59	39
0050	Light reinforcing, over 6 C.F.		75	.533	"				19.75	3.11	22.86	34
0200	Slob on grade to 6" thick, not reinforced, under 8 S.F.		85	.471	S.F.				17.45	2.75	20.20	30
0250	8 – 16 S.F.	▼	175	.229	"				8.45	1.33	9.78	14.50
0255	For over 16 S.F. see Line 02 41 16.17 0400											
0600	Wolls, not reinforced, under 6 C.F.	B-9	60	.667	C.F.				24.50	3.89	28.39	42.50
0650	6 – 12 C.F.	"	80	.500	"				18.55	2.92	21.47	31.50
0655	For over 12 C.F. see Line 02 41 16.17 2500											
1000	Concrete, elevoted slob, bor reinforced, under 6 C.F.	B-9	45	.889	C.F.				33	5.20	38.20	56.50
1050	Bor reinforced, over 6 C.F.		50	.800	"				29.50	4.67	34.17	50.50
1200	Slob on grade to 6" thick, bor reinforced, under 8 S.F.		75	.533	S.F.				19.75	3.11	22.86	34
1250	8 – 16 S.F.	▼	150	.267	"				9.90	1.56	11.46	16.95
1255	For over 16 S.F. see Line 02 41 16.17 0440											
1400	Wolls, bor reinforced, under 6 C.F.	B-9	50	.800	C.F.				29.50	4.67	34.17	50.50
1450	6 – 12 C.F.	"	70	.571	"				21	3.34	24.34	36
1455	For over 12 C.F. see Lines 02 41 16.17 2500 ond 2600											
2000	Brick, to 4 S.F. opening, not including toothing											
2040	4" thick	B-9	30	1.333	Eo.				49.50	7.80	57.30	84.50
2060	8" thick		18	2.222					82.50	13	95.50	141
2080	12" thick		10	4					148	23.50	171.50	255
2400	Concrete block, to 4 S.F. apening, 2" thick		35	1.143					42.50	6.65	49.15	73
2420	4" thick		30	1.333					49.50	7.80	57.30	84.50
2440	8" thick		27	1.481					55	8.65	63.65	94
2460	12" thick		24	1.667					62	9.75	71.75	106
2600	Gypsum block, to 4 S.F. apening, 2" thick		80	.500					18.55	2.92	21.47	31.50
2620	4" thick		70	.571					21	3.34	24.34	36
2640	8" thick		55	.727					27	4.25	31.25	46
2800	Terro cotto, to 4 S.F. apening, 4" thick		70	.571					21	3.34	24.34	36
2840	8" thick		65	.615					23	3.59	26.59	39
2880	12" thick	▼	50	.800	▼				29.50	4.67	34.17	50.50
3000	Tooothing masonry cutouts, brick, soft old mortor	1 Brhe	40	.200	V.L.F.				7.40		7.40	11.30
3100	Hord mortor		30	.267					9.85		9.85	15.05
3200	Block, soft ald martar		70	.114					4.23		4.23	6.45
3400	Hord mortor	▼	50	.160	▼				5.90		5.90	9
6000	Walls, interior, nat including re-froming,											
6010	openings to 5 S.F.											
6100	Drywall to 5/8" thick	1 Clob	24	.333	Eo.				12.20		12.20	18.85
6200	Poneling to 3/4" thick		20	.400					14.65		14.65	22.50
6300	Ploster, on gypsum loth		20	.400					14.65		14.65	22.50
6340	On wire loth	▼	14	.571	▼				21		21	32.50
7000	Wood frame, not including re-froming, apenings to 5 S.F.											
7200	Floors, sheothing ond flooring to 2" thick	1 Clab	5	1.600	Ea.				58.50		58.50	90.50
7310	Roofs, sheothing to 1" thick, nat including roofing		6	1.333					49		49	75.50
7410	Walls, sheothing to 1" thick, not including siding	▼	7	1.143	▼				42		42	64.50

02 41 19.18 Selective Demolition, Disposal Only

0010	SELECTIVE DEMOLITION, DISPOSAL ONLY			R024119-10								
0015	Urban bldg w/solvege value allowed											
0020	Including loading ond 5 mile houl to dump											
0200	Steel frame	B-3	430	.112	C.Y.				4.39	6	10.39	13.35
0300	Concrete frame	▼	365	.132					5.15	7.05	12.20	15.65
0400	Mosonry construction	▼	445	.108	▼				4.24	5.80	10.04	12.85

02 41 Demolition

02 41 19 – Selective Demolition

02 41 19.18 Selective Demolition, Disposal Only				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0500	Wood frame			B-3	247	.194	C.Y.		Labor	Equipment	18.10	23
02 41 19.19 Selective Facility Services Demolition												
0010	SELECTIVE FACILITY SERVICES DEMOLITION, Rubbish Handling			R024119-10								
0020	The following are to be added to the demolition prices											
0050	The following are components for a complete chute system											
0100	Top chute circular steel, 4' long, 18" diameter			R024119-30	B-1C	15	1.600	Eo.	256	59.50	30.50	346 405
0102	23" diameter					15	1.600		277	59.50	30.50	367 430
0104	27" diameter					15	1.600		299	59.50	30.50	389 455
0106	30" diameter					15	1.600		320	59.50	30.50	410 475
0108	33" diameter					15	1.600		340	59.50	30.50	430 500
0110	36" diameter					15	1.600		365	59.50	30.50	455 525
0112	Regular chute, 18" diameter					15	1.600		192	59.50	30.50	282 335
0114	23" diameter					15	1.600		213	59.50	30.50	303 360
0116	27" diameter					15	1.600		234	59.50	30.50	324 385
0118	30" diameter					15	1.600		256	59.50	30.50	346 405
0120	33" diameter					15	1.600		277	59.50	30.50	367 430
0122	36" diameter					15	1.600		299	59.50	30.50	389 455
0124	Control door chute, 18" diameter					15	1.600		365	59.50	30.50	455 525
0126	23" diameter					15	1.600		385	59.50	30.50	475 545
0128	27" diameter					15	1.600		405	59.50	30.50	495 570
0130	30" diameter					15	1.600		425	59.50	30.50	515 595
0132	33" diameter					15	1.600		445	59.50	30.50	535 615
0134	36" diameter					15	1.600		470	59.50	30.50	560 640
0136	Chute liners, 14 ga., 18-30" diameter					15	1.600		215	59.50	30.50	305 360
0138	33-36" diameter					15	1.600		269	59.50	30.50	359 420
0140	17% thinner chute, 30" diameter					15	1.600		213	59.50	30.50	303 360
0142	33% thinner chute, 30" diameter					15	1.600		160	59.50	30.50	250 300
0144	Top chute cover				1 Clob	24	.333		147	12.20	159.20	181
0146	Door chute cover				"	24	.333		147	12.20	159.20	181
0148	Top chute trough				2 Clob	12	1.333		490	49	539	615
0150	Bolt down frame & counter weights, 250 lb.				B-1	4	6		4,075	224	4,299	4,825
0152	500 lb.					4	6		5,950	224	6,174	6,900
0154	750 lb.					4	6		8,750	224	8,974	9,975
0156	1000 lb.					2.67	8.989		9,775	335	10,110	11,300
0158	1500 lb.					2.67	8.989		12,500	335	12,835	14,300
0160	Chute warning light system, 5 stories				B-1C	4	6		8,625	224	114	8,963 9,950
0162	10 stories				"	2	12		13,700	450	228	14,378 16,000
0164	Dust control device for dumpsters				1 Clob	8	1		98	36.50	134.50	165
0166	Install or replace breakaway cord					8	1		26	36.50	62.50	85
0168	Install or replace warning sign				▼	16	.500	▼	11	18.35	29.35	40.50
0600	Dumpster, weekly rental, 1 dump/week, 6 C.Y. capacity (2 Tons)							Week	415		415	455
0700	10 C.Y. capacity (3 Tons)								480		480	530
0725	20 C.Y. capacity (5 Tons)			R024119-20					565		565	625
0800	30 C.Y. capacity (7 Tons)								730		730	800
0840	40 C.Y. capacity (10 Tons)								775		775	850
2000	Load, haul, dump and return, 50' haul, hand carried				2 Clob	24	.667	C.Y.		24.50	24.50	37.50
2005	Wheeled					37	.432			15.85	15.85	24.50
2040	51' to 100' haul, hand carried					16.50	.970			35.50	35.50	55
2045	Wheeled					25	.640			23.50	23.50	36
2080	Over 100' haul, odd per 100 L.F., hand carried					35.50	.451			16.50	16.50	25.50
2085	Wheeled					54	.296			10.85	10.85	16.75
2120	In elevators, per 10 floors, odd					140	.114			4.19	4.19	6.45

02 41 Demolition

02 41 19 – Selective Demolition

02 41 19.19 Selective Facility Services Demolition		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2130	Load, haul, dump and return, up to 50' haul, incl. up to 5 rsr stair, hand	2 Clab	23	.696	C.Y.		25.50		25.50	39.50
2135	Wheeled		35	.457			16.75		16.75	26
2140	6 – 10 riser stairs, hand carried		22	.727			26.50		26.50	41
2145	Wheeled		34	.471			17.25		17.25	26.50
2150	11 – 20 riser stairs, hand carried		20	.800			29.50		29.50	45
2155	Wheeled		31	.516			18.90		18.90	29
2160	21 – 40 riser stairs, hand carried		16	1			36.50		36.50	56.50
2165	Wheeled		24	.667			24.50		24.50	37.50
2170	100' haul, incl. 5 riser stair, hand carried		15	1.067			39		39	60.50
2175	Wheeled		23	.696			25.50		25.50	39.50
2180	6 – 10 riser stair, hand carried		14	1.143			42		42	64.50
2185	Wheeled		21	.762			28		28	43
2190	11 – 20 riser stair, hand carried		12	1.333			49		49	75.50
2195	Wheeled		18	.889			32.50		32.50	50.50
2200	21 – 40 riser stair, hand carried		8	2			73.50		73.50	113
2205	Wheeled		12	1.333			49		49	75.50
2210	Over 100' haul, add per 100 L.F., hand carried		35.50	.451			16.50		16.50	25.50
2215	Wheeled		54	.296			10.85		10.85	16.75
2220	For each additional flight of stairs, up to 5 risers, add		550	.029	Flight		1.07		1.07	1.65
2225	6 – 10 risers, add		275	.058			2.13		2.13	3.29
2230	11 – 20 risers, add		138	.116			4.25		4.25	6.55
2235	21 – 40 risers, add		69	.232			8.50		8.50	13.10
3000	Loading & trucking, including 2 mile haul, chute loaded	B-16	45	.711	C.Y.		26.50	15.40	41.90	58
3040	Hand loading truck, 50' haul	"	48	.667			25	14.40	39.40	54.50
3080	Machine loading truck	B-17	120	.267			10.55	6.50	17.05	23.50
5000	Haul, per mile, up to 8 C.Y. truck	B-34B	1165	.007			.26	.59	.85	1.04
5100	Over 8 C.Y. truck	"	1550	.005			.19	.45	.64	.79

02 41 19.20 Selective Demolition, Dump Charges

0010	SELECTIVE DEMOLITION, DUMP CHARGES	R024119-10								
0020	Dump charges, typical urban city, tipping fees only									
0100	Building construction materials				Ton	74			74	81
0200	Trees, brush, lumber					63			63	69.50
0300	Rubbish only					63			63	69.50
0500	Reclamation station, usual charge					74			74	81

02 41 19.21 Selective Demolition, Gutting

0010	SELECTIVE DEMOLITION, GUTTING	R024119-10								
0020	Building interior, including disposal, dumpster fees not included									
0500	Residential building									
0560	Minimum	B-16	400	.080	SF Flr.		2.99	1.73	4.72	6.50
0580	Maximum	"	360	.089	"		3.32	1.92	5.24	7.20
0900	Commercial building									
1000	Minimum	B-16	350	.091	SF Flr.		3.42	1.98	5.40	7.45
1020	Maximum	"	250	.128	"		4.78	2.77	7.55	10.40

02 41 19.25 Selective Demolition, Saw Cutting

0010	SELECTIVE DEMOLITION, SAW CUTTING	R024119-10								
0015	Asphalt, up to 3" deep	B-89	1050	.015	L.F.	.14	.64	.50	1.28	1.67
0020	Each additional inch of depth	"	1800	.009		.05	.37	.29	.71	.93
1200	Masonry walls, hydraulic saw, brick, per inch of depth	B-89B	300	.053		.05	2.23	3.03	5.31	6.75
1220	Block walls, solid, per inch of depth	"	250	.064		.05	2.67	3.64	6.36	8.10
2000	Brick or masonry w/hand held saw, per inch of depth	A-1	125	.064		.06	2.35	.67	3.08	4.43
5000	Wood sheathing to 1" thick, on walls	1 Carp	200	.040			1.83		1.83	2.83
5020	On roof	"	250	.032			1.47		1.47	2.26

02 41 Demolition

02 41 19 – Selective Demolition

02 41 19.27 Selective Demolition, Torch Cutting				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SELECTIVE DEMOLITION, TORCH CUTTING			R024119-10								
0020	Steel, 1" thick plate			E-25	333	.024	L.F.	.76	1.28	.03	2.07	3.12
0040	1" diameter bar			"	600	.013	Ea.	.13	.71	.02	.86	1.41
1000	Oxygen lance cutting, reinforced concrete walls											
1040	12" to 16" thick walls			1 Clab	10	.800	L.F.		29.50		29.50	45
1080	24" thick walls			"	6	1.333	"		49		49	75.50

02 42 Removal and Salvage of Construction Materials

02 42 10 – Building Deconstruction

02 42 10.10 Estimated Salvage Value or Savings

0010	ESTIMATED SALVAGE VALUE OR SAVINGS											
0015	Excludes material handling, packaging, container costs and											
0020	transportation for salvage or disposal											
0050	All Items in Section 02 42 10.10 are credit deducts and not costs											
0100	Copper Wire Salvage Value	G					Lb.				1.60	1.60
0110	Disposal Savings	G									.04	.04
0200	Copper Pipe Salvage Value	G									2.50	2.50
0210	Disposal Savings	G									.05	.05
0300	Steel Pipe Salvage Value	G									.06	.06
0310	Disposal Savings	G									.03	.03
0400	Cast Iron Pipe Salvage Value	G									.03	.03
0410	Disposal Savings	G									.01	.01
0500	Steel Doors or Windows Salvage Value	G									.06	.06
0510	Aluminum	G									.55	.55
0520	Disposal Savings	G									.03	.03
0600	Aluminum Siding Salvage Value	G									.49	.49
0630	Disposal Savings	G									.03	.03
0640	Wood Siding (no lead or asbestos)	G					C.Y.				12	12
0800	Clean Concrete Disposal Savings	G					Ton				62	62
0850	Asphalt Shingles Disposal Savings	G					"				60	60
1000	Wood wall framing clean salvage value	G					M.B.F.				55	55
1010	Painted	G									44	44
1020	Floor framing	G									55	55
1030	Painted	G									44	44
1050	Roof framing	G									55	55
1060	Painted	G									44	44
1100	Wood beams salvage value	G									55	55
1200	Wood framing and beams disposal savings	G					Ton				66	66
1220	Wood sheating and sub-base flooring	G									72.50	72.50
1230	Wood wall paneling (1/4 inch thick)	G									66	66
1300	Wood panel 3/4-1 inch thick low salvage value	G					S.F.				.55	.55
1350	high salvage value	G					"				2.20	2.20
1400	Disposal savings	G					Ton				66	66
1500	Flooring tongue and groove 25/32 inch thick low salvage value	G					S.F.				.55	.55
1530	High salvage value	G					"				1.10	1.10
1560	Disposal savings	G					Ton				66	66
1600	Drywall or sheet rock salvage value	G									22	22
1650	Disposal savings	G									66	66

02 42 Removal and Salvage of Construction Materials

02 42 10 – Building Deconstruction

02 42 10.20 Deconstruction of Building Components		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	DECONSTRUCTION OF BUILDING COMPONENTS									
0012	Buildings one or two stories only									
0015	Excludes material handling, packaging, container costs and transportation for salvage or disposal									
0020										
0050	Deconstruction of Plumbing Fixtures									
0100	Wall hung or countertop lavatory	G	2 Clab	16	1 Ea.		36.50		36.50	56.50
0110	Single or double compartment kitchen sink	G		14	1.143		42		42	64.50
0120	Wall hung urinal	G		14	1.143		42		42	64.50
0130	Floor mounted	G		8	2		73.50		73.50	113
0140	Floor mounted water closet	G		16	1		36.50		36.50	56.50
0150	Wall hung	G		14	1.143		42		42	64.50
0160	Water fountain, free standing	G		16	1		36.50		36.50	56.50
0170	Wall hung or deck mounted	G		12	1.333		49		49	75.50
0180	Bathtub, steel or fiberglass	G		10	1.600		58.50		58.50	90.50
0190	Cast iron	G		8	2		73.50		73.50	113
0200	Shower, single	G		6	2.667		97.50		97.50	151
0210	Group	G		7	2.286		84		84	129
0300	Deconstruction of Electrical Fixtures									
0310	Surface mount incandescent fixtures	G	2 Clab	48	.333 Ea.		12.20		12.20	18.85
0320	Fluorescent, 2 lamp	G		32	.500		18.35		18.35	28.50
0330	4 lamp	G		24	.667		24.50		24.50	37.50
0340	Strip Fluorescent, 1 lamp	G		40	.400		14.65		14.65	22.50
0350	2 lamp	G		32	.500		18.35		18.35	28.50
0400	Recessed drop-in fluorescent fixture, 2 lamp	G		27	.593		21.50		21.50	33.50
0410	4 lamp	G		18	.889		32.50		32.50	50.50
0500	Deconstruction of appliances									
0510	Cooking stoves	G	2 Clab	26	.615 Ea.		22.50		22.50	35
0520	Dishwashers	G	"	26	.615 "		22.50		22.50	35
0600	Deconstruction of millwork and trim									
0610	Cabinets, wood	G	2 Carp	40	.400 L.F.		18.35		18.35	28.50
0620	Countertops	G		100	.160 "		7.35		7.35	11.30
0630	Wall paneling, 1 inch thick	G		500	.032 S.F.		1.47		1.47	2.26
0640	Ceiling trim	G		500	.032 L.F.		1.47		1.47	2.26
0650	Wainscoting	G		500	.032 S.F.		1.47		1.47	2.26
0660	Base, 3/4" to 1" thick	G		600	.027 L.F.		1.22		1.22	1.89
0700	Deconstruction of doors and windows									
0710	Doors, wrap, interior, wood, single, no closers	G	2 Carp	21	.762 Ea.	4.25	35		39.25	58.50
0720	Double	G		13	1.231	8.50	56.50		65	96.50
0730	Solid core, single, exterior or interior	G		10	1.600	4.25	73.50		77.75	118
0740	Double	G		8	2	8.50	91.50		100	151
0810	Windows, wrap, wood, single									
0812	with no casement or cladding	G	2 Carp	21	.762 Ea.	4.25	35		39.25	58.50
0820	with casement and/or cladding	G	"	18	.889 "	4.25	41		45.25	67.50
0900	Deconstruction of interior finishes									
0910	Drywall for recycling	G	2 Clab	1775	.009 S.F.		.33		.33	.51
0920	Plaster wall, first floor	G		1775	.009		.33		.33	.51
0930	Second floor	G		1330	.012		.44		.44	.68
1000	Deconstruction of roofing and accessories									
1010	Built-up roofs	G	2 Clab	570	.028 S.F.		1.03		1.03	1.59
1020	Gutters, fascia and rakes	G	"	1140	.014 L.F.		.51		.51	.79
2000	Deconstruction of wood components									
2010	Roof sheathing	G	2 Clab	570	.028 S.F.		1.03		1.03	1.59

02 42 Removal and Salvage of Construction Materials

02 42 10 – Building Deconstruction

02 42 10.20 Deconstruction of Building Components			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
2020	Main roof froming	G	2 Clob	760	.021	L.F.		.77		.77	1.19
2030	Porch roof froming	G		445	.036			1.32		1.32	2.03
2040	Beoms 4" x 8"	G	B-1	375	.064			2.39		2.39	3.69
2050	4" x 10"	G		300	.080			2.99		2.99	4.61
2055	4" x 12"	G		250	.096			3.58		3.58	5.55
2060	6" x 8"	G		250	.096			3.58		3.58	5.55
2065	6" x 10"	G		200	.120			4.48		4.48	6.90
2070	6" x 12"	G		170	.141			5.25		5.25	8.15
2075	8" x 12"	G		126	.190			7.10		7.10	10.95
2080	10" x 12"	G		100	.240			8.95		8.95	13.80
2100	Ceiling joists	G	2 Clob	800	.020			.73		.73	1.13
2150	Woll froming, interior	G		1230	.013			.48		.48	.74
2160	Sub-floor	G		2000	.008	S.F.		.29		.29	.45
2170	Floor joists	G		2000	.008	L.F.		.29		.29	.45
2200	Wood siding (no lead or asbestos)	G		1300	.012	S.F.		.45		.45	.70
2300	Wall framing, exterior	G		1600	.010	L.F.		.37		.37	.57
2400	Stair risers	G		53	.302	Ea.		11.05		11.05	17.05
2500	Posts	G		800	.020	L.F.		.73		.73	1.13
3000	Deconstruction of exterior brick wolls										
3010	Exterior brick wolls, first floor	G	2 Clob	200	.080	S.F.		2.93		2.93	4.52
3020	Second floor	G		64	.250	"		9.15		9.15	14.15
3030	Brick chimney	G		100	.160	C.F.		5.85		5.85	9.05
4000	Deconstruction of concrete										
4010	Slob on grade, 4" thick, plain concrete	G	B-9	500	.080	S.F.		2.96	.47	3.43	5.10
4020	Wire mesh reinforced	G		470	.085			3.15	.50	3.65	5.40
4030	Rod reinforced	G		400	.100			3.71	.58	4.29	6.35
4110	Foundation wall, 6" thick, plain concrete	G		160	.250			9.25	1.46	10.71	15.90
4120	8" thick	G		140	.286			10.60	1.67	12.27	18.20
4130	10" thick	G		120	.333			12.35	1.95	14.30	21
9000	Deconstruction process, support equipment os needed										
9010	Daily use, portol to portol, 12-ton truck-mounted hydraulic crane crew	G	A-3H	1	8	Day		400	875	1,275	1,575
9020	Daily use, skid steer and operator	G	A-3C	1	8			375	310	685	910
9030	Daily use, bockhoe 48 H.P., operator ond labor	G	"	1	8			375	310	685	910

02 42 10.30 Deconstruction Material Handling

0010	DECONSTRUCTION MATERIAL HANDLING										
0012	Buildings one or two stories only										
0100	Clean and stack brick on pallet	G	2 Clob	1200	.013	Ea.		.49		.49	.75
0200	Haul 50' ond load rough lumber up to 2" x 8" size	G		2000	.008	"		.29		.29	.45
0210	Lumber longer than 2" x 8"	G		3200	.005	B.F.		.18		.18	.28
0300	Finish wood for recycling stock and wrop per pallet	G		8	2	Ea.	34	73.50		107.50	151
0350	Light fixtures			6	2.667		61	97.50		158.50	219
0375	Windows			6	2.667		58	97.50		155.50	215
0400	Miscellaneous materials			8	2		17	73.50		90.50	132
1000	See Section 02 41 19.19 for bulk materiol handling										

02 43 Structure Moving

02 43 13 – Structure Relocation

02 43 13.13 Building Relocation		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	BUILDING RELOCATION									
0011	One day move, up to 24' wide									
0020	Reset on new foundation, patch & hook-up, average move				Total					11,500
0040	Wood or steel frame bldg., based on ground floor area	G	B-4	185	.259	S.F.	9.65	2.80	12.45	17.95
0060	Masonry bldg., based on ground floor area	G	"	137	.350		13	3.78	16.78	24
0200	For 24' to 42' wide, add								15%	15%
0220	For each additional day on road, add	G	B-4	1	48	Day	1,775	520	2,295	3,325
0240	Construct new basement, move building, 1 day									
0300	move, patch & hook-up, based on ground floor area	G	B-3	155	.310	S.F.	10.25	12.20	16.60	39.05
										48.50

02 56 Site containment

02 56 13 – Waste containment

02 56 13.10 Containment of Hazardous Waste

0010	CONTAINMENT OF HAZARDOUS WASTE									
0020	OSHA hazard level C									
0030	OSHA Hazard level D decrease labor and equipment, deduct						-45%	-45%		
0035	OSHA Hazard level B increase labor and equipment, add						22%	22%		
0040	OSHA Hazard level A increase labor and equipment, add						71%	71%		
0100	Excavation of contaminated soil & waste									
0105	Includes one respirator filter and two disposable suits per work day									
0110	3/4 C.Y. excavator to 10 feet deep	B-12F	51	.314	B.C.Y.	2.55	13.65	13	29.20	38
0120	Labor crew to 6' deep	B-2	19	2.105		17.15	78		95.15	139
0130	6' - 12' deep	"	12	3.333		27	124		151	221
0200	Move contaminated soil/waste up to 150' on-site with 2.5 C.Y. loader	B-10T	300	.040	L.C.Y.	.43	1.79	1.74	3.96	5.15
0210	300'	"	186	.065	"	.70	2.89	2.81	6.40	8.25
0300	Secure burial cell construction									
0310	Various liner and cover materials									
0400	Very low density polyethylene (VLDPE)									
0410	50 mil top cover	B-47H	4000	.008	S.F.	.43	.38	.08	.89	1.15
0420	80 mil liner	"	4000	.008	"	.50	.38	.08	.96	1.23
0500	Chlorosulfonated polyethylene									
0510	36 mil hypalon top cover	B-47H	4000	.008	S.F.	1.53	.38	.08	1.99	2.36
0520	45 mil hypalon liner	"	4000	.008	"	1.63	.38	.08	2.09	2.47
0600	Polyvinyl chloride (PVC)									
0610	60 mil top cover	B-47H	4000	.008	S.F.	.80	.38	.08	1.26	1.55
0620	80 mil liner	"	4000	.008	"	.92	.38	.08	1.38	1.69
0700	Rough textured H.D. polyethylene (HDPE)									
0710	40 mil top cover	B-47H	4000	.008	S.F.	.41	.38	.08	.87	1.13
0720	60 mil top cover		4000	.008		.47	.38	.08	.93	1.19
0722	60 mil liner		4000	.008		.40	.38	.08	.86	1.12
0730	80 mil liner		3800	.008		.51	.40	.09	1	1.28
1000	3/4" crushed stone, 6" deep ballast around liner	B-6	30	.800	L.C.Y.	28.50	32	12.20	72.70	93.50
1100	Hazardous waste, ballast cover with common borrow material	B-63	56	.714		12.35	27.50	3.11	42.96	59.50
1110	Mixture of common borrow & topsoil		56	.714		18.45	27.50	3.11	49.06	66.50
1120	Bank sand		56	.714		17.55	27.50	3.11	48.16	65
1130	Medium priced clay		44	.909		23	35	3.96	61.96	84
1140	Mixture of common borrow & medium priced clay		56	.714		17.75	27.50	3.11	48.36	65.50

02 58 Snow Control

02 58 13 – Snow Fencing

		Daily Crew	Output	Labar- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
02 58 13.10 Snow Fencing System							Labar	Equipment		
0010	SNOW FENCING SYSTEM									
7001	Snow fence an steel posts 10' O.C., 4' high	B-1	500	.048	L.F.	.96	1.79		2.75	3.82

02 65 Underground Storage Tank Removal

02 65 10 – Underground Tank and Contaminated Soil Removal

02 65 10.30 Removal of Underground Storage Tanks

0010	REMOVAL OF UNDERGROUND STORAGE TANKS		R026510-20								
0011	Petroleum storage tanks, non-leaking										
0100	Excavate & load onto trailer										
0110	3000 gal. to 5000 gal. tank	G	B-14	4	12	Ea.		465	91.50	556.50	815
0120	6000 gal. to 8000 gal. tank	G	B-3A	3	13.333			520	345	865	1,175
0130	9000 gal. to 12000 gal. tank	G	"	2	20	▼		780	515	1,295	1,775
0190	Known leaking tank, odd					%				100%	100%
0200	Remove sludge, water and remaining product from tank bottom										
0201	of tank with vacuum truck										
0300	3000 gal. to 5000 gal. tank	G	A-13	5	1.600	Ea.		75.50	154	229.50	284
0310	6000 gal. to 8000 gal. tank	G		4	2			94	193	287	355
0320	9000 gal. to 12000 gal. tank	G		3	2.667	▼		125	257	382	475
0390	Dispose of sludge off-site, overage					Gal.				6.25	6.80
0400	Insert inert solid CO ₂ "dry ice" into tank										
0401	For cleaning/transporting tanks (1.5 lb./100 gal. cap)	G	1 Clob	500	.016	Lb.	1.08	.59		1.67	2.09
0403	Insert solid carbon dioxide, 1.5 lb./100 gal.	G	"	400	.020	"	1.08	.73		1.81	2.32
0503	Disconnect and remove piping	G	1 Plum	160	.050	L.F.		2.88		2.88	4.35
0603	Transfer liquids, 10% of volume	G	"	1600	.005	Gal.		.29		.29	.43
0703	Cut accessway into underground storage tank	G	1 Clob	5.33	1.501	Ea.		55		55	85
0813	Remove sludge, wash and wipe tank, 500 gal.	G	1 Plum	8	1			57.50		57.50	87
0823	3,000 gal.	G		6.67	1.199			69		69	104
0833	5,000 gal.	G		6.15	1.301			75		75	113
0843	8,000 gal.	G		5.33	1.501			86.50		86.50	130
0853	10,000 gal.	G		4.57	1.751			101		101	152
0863	12,000 gal.	G		4.21	1.900	▼		109		109	165
1020	Haul tank to certified salvage dump, 100 miles round trip										
1023	3000 gal. to 5000 gal. tank					Ea.				760	830
1026	6000 gal. to 8000 gal. tank									880	960
1029	9,000 gal. to 12,000 gal. tank					▼				1,050	1,150
1100	Disposal of contaminated soil to landfill										
1110	Minimum					C.Y.				145	160
1111	Maximum					"				400	440
1120	Disposal of contaminated soil to										
1121	bituminous concrete batch plant										
1130	Minimum					C.Y.				80	88
1131	Maximum					"				115	125
1203	Excavate, pull, & load tank, backfill hole, 8,000 gal. +	G	B-12C	.50	32	Ea.		1,400	2,350	3,750	4,700
1213	Haul tank to certified dump, 100 miles rt, 8,000 gal. +	G	B-34K	1	8			300	960	1,260	1,500
1223	Excavate, pull, & load tank, backfill hole, 500 gal.	G	B-11C	1	16			685	365	1,050	1,450
1233	Excavate, pull, & load tank, backfill hole, 3,000 – 5,000 gal.	G	B-11M	.50	32			1,375	795	2,170	2,975
1243	Haul tank to certified dump, 100 miles rt, 500 gal.	G	B-34L	1	8			375	270	645	865
1253	Haul tank to certified dump, 100 miles rt, 3,000 – 5,000 gal.	G	B-34M	1	8	▼		375	335	710	935
2010	Decontamination of soil on site incl poly tarp on top/bottom										
2011	Soil containment berm, and chemical treatment										
2020	Minimum	G	B-11C	100	.160	C.Y.	7.80	6.85	3.65	18.30	23

02 65 Underground Storage Tank Removal

02 65 10 – Underground Tank and Contaminated Soil Removal

02 65 10.30 Removal of Underground Storage Tanks				Daily	Labor-	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
				Crew	Output			Labor	Equipment		
2021	Maximum	G	B-11C	100	.160	C.Y.	10.10	6.85	3.65	20.60	25.50
2050	Disposal of decontaminated soil, minimum									135	150
2055	Maximum									400	440

02 81 Transportation and Disposal of Hazardous Materials

02 81 20 – Hazardous Waste Handling

02 81 20.10 Hazardous Waste Cleanup/Pickup/Disposal

0010	HAZARDOUS WASTE CLEANUP/PICKUP/DISPOSAL										
0100	For contractor rental equipment, i.e., Dozer,										
0110	Front end loader, Dump truck, etc., see 01 54 33 Reference Section										
1000	Solid pickup										
1100	55 gal. drums					Eo.				240	265
1120	Bulk material, minimum					Ton				190	210
1130	Maximum					"				595	655
1200	Transportation to disposal site										
1220	Truckload = 80 drums or 25 C.Y. or 18 tons										
1260	Minimum					Mile				3.95	4.45
1270	Maximum					"				7.25	7.35
3000	Liquid pickup, vacuum truck, stainless steel tank										
3100	Minimum charge, 4 hours										
3110	1 compartment, 2200 gallon					Hr.				140	155
3120	2 compartment, 5000 gallon					"				200	225
3400	Transportation in 6900 gallon bulk truck										
3410	In teflon lined truck					Mile				7.95	8.75
						"				10.20	11.25
5000	Heavy sludge or dry vacuumable material										
6000	Dumpsite disposal charge, minimum					Hr.				140	160
6020	Maximum					Ton				140	155
						"				415	455

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.39 Asbestos Remediation Plans and Methods

0010	ASBESTOS REMEDIATION PLANS AND METHODS										
0100	Building Survey-Commercial Building					Eo.				2,200	2,400
0200	Asbestos Abatement Remediation Plan					"				1,350	1,475

02 82 13.41 Asbestos Abatement Equip.

0010	ASBESTOS ABATEMENT EQUIP.	R028213-20									
0011	Equipment and supplies, buy										
0200	Air filtration device, 2000 CFM					Eo.	940			940	1,025
0250	Large volume air sampling pump, minimum						340			340	375
0260	Maximum						330			330	360
0300	Airless sprayer unit, 2 gun						4,425			4,425	4,850
0350	Light stand, 500 watt						48			48	53
0400	Personal respirators										
0410	Negative pressure, 1/2 face, dual operation, min.					Eo.	26			26	28.50
0420	Maximum						29			29	31.50
0450	P.A.P.R., full face, minimum						122			122	134
0460	Maximum						162			162	178
0470	Supplied air, full face, incl. air line, minimum						165			165	182
0480	Maximum						395			395	435

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.41 Asbestos Abatement Equip.

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0500	Personnel sampling pump				Ea.	222			222	244
1500	Power panel, 20 unit, incl. GFI					590			590	650
1600	Shower unit, including pump and filters					1,250			1,250	1,375
1700	Supplied air system (type C)					3,350			3,350	3,675
1750	Vacuum cleaner, HEPA, 16 gal., stainless steel, wet/dry					1,175			1,175	1,300
1760	55 gallon					1,225			1,225	1,350
1800	Vacuum loader, 9 – 18 ton/hr.					92,500			92,500	102,000
1900	Water atomizer unit, including 55 gal. drum					275			275	305
2000	Worker protection, whole body, foot, head cover & gloves, plastic					14.50			14.50	15.95
2500	Respirator, single use					24.50			24.50	27
2550	Cartridge for respirator					7.15			7.15	7.85
2570	Glove bag, 7 mil, 50" x 64"					16.25			16.25	17.90
2580	10 mil, 44" x 60"					5.65			5.65	6.20
2590	6 mil, 44" x 60"					5.65			5.65	6.20
3000	HEPA vacuum for work area, minimum					1,400			1,400	1,550
3050	Maximum					1,450			1,450	1,600
6000	Disposable polyethylene bags, 6 mil, 3 C.F.					1.65			1.65	1.82
6300	Disposable fiber drums, 3 C.F.					17.85			17.85	19.65
6400	Pressure sensitive caution labels, 3" x 5"					3.40			3.40	3.74
6450	11" x 17"					7.20			7.20	7.90
6500	Negative air machine, 1800 CFM					830			830	915

02 82 13.42 Preparation of Asbestos Containment Area

0010	PREPARATION OF ASBESTOS CONTAINMENT AREA									
0100	Pre-cleaning, HEPA vacuum and wet wipe, flat surfaces	A-9	12000	.005	S.F.	.02	.27		.29	.45
0200	Protect carpeted area, 2 layers 6 mil poly on 3/4" plywood	"	1000	.064		2	3.28		5.28	7.30
0300	Separation barrier, 2" x 4" @ 16", 1/2" plywood ea. side, 8' high	2 Carp	400	.040		3.25	1.83		5.08	6.40
0310	12' high		320	.050		3.25	2.29		5.54	7.10
0320	16' high		200	.080		2.25	3.67		5.92	8.15
0400	Personnel decontam. chamber, 2" x 4" @ 16", 3/4" ply ea. side		280	.057		4.25	2.62		6.87	8.70
0450	Waste decontam. chamber, 2" x 4" studs @ 16", 3/4" ply ea. side	▼	360	.044	▼	4.25	2.04		6.29	7.80
0500	Cover surfaces with polyethylene sheeting									
0501	Including glue and tape									
0550	Floors, each layer, 6 mil	A-9	8000	.008	S.F.	.04	.41		.45	.69
0551	4 mil		9000	.007		.03	.36		.39	.60
0560	Walls, each layer, 6 mil		6000	.011		.04	.55		.59	.90
0561	4 mil	▼	7000	.009	▼	.03	.47		.50	.76
0570	For heights above 12', add						20%			
0575	For heights above 20', add						30%			
0580	For fire retardant poly, add					100%				
0590	For large open areas, deduct					10%	20%			
0600	Seal floor penetrations with foam firestop to 36 sq. in.	2 Carp	200	.080	Ea.	9.25	3.67		12.92	15.85
0610	36 sq. in. to 72 sq. in.		125	.128		18.50	5.85		24.35	29.50
0615	72 sq. in. to 144 sq. in.		80	.200		37	9.15		46.15	55
0620	Wall penetrations, to 36 square inches		180	.089		9.25	4.08		13.33	16.50
0630	36 sq. in. to 72 sq. in.		100	.160		18.50	7.35		25.85	32
0640	72 sq. in. to 144 sq. in.	▼	60	.267	▼	37	12.25		49.25	60
0800	Caulk seams with lotex	1 Carp	230	.035	L.F.	.17	1.59		1.76	2.65
0900	Set up neg. air machine, 1-2k CFM/25 M.C.F. volume	1 Asbe	4.30	1.860	Ea.		95		95	148
0950	Set up and remove portable shower unit	2 Asbe	4	4	"		205		205	320

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.43 Bulk Asbestos Removal		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	BULK ASBESTOS REMOVAL									
0020	Includes disposable tools and 2 suits and 1 respirator filter/day/worker									
0100	Beams, W 10 x 19	A-9	235	.272	L.F.	1.23	13.95		15.18	23
0110	W 12 x 22		210	.305		1.38	15.60		16.98	26
0120	W 14 x 26		180	.356		1.61	18.20		19.81	30.50
0130	W 16 x 31		160	.400		1.81	20.50		22.31	34
0140	W 18 x 40		140	.457		2.06	23.50		25.56	39
0150	W 24 x 55		110	.582		2.63	30		32.63	49.50
0160	W 30 x 108		85	.753		3.40	38.50		41.90	63.50
0170	W 36 x 150		72	.889		4.01	45.50		49.51	75.50
0200	Bailer insulation		480	.133	S.F.	.67	6.85		7.52	11.40
0210	With metal lath, add				%				50%	50%
0300	Bailer breeching or flue insulation	A-9	520	.123	S.F.	.56	6.30		6.86	10.40
0310	For active bailer, add				%				100%	100%
0400	Duct or AHU insulation	A-10B	440	.073	S.F.	.33	3.73		4.06	6.15
0500	Duct vibration isolation joints, up to 24 sq. in. duct	A-9	56	1.143	Ea.	5.15	58.50		63.65	96.50
0520	25 sq. in. to 48 sq. in. duct		48	1.333		6	68.50		74.50	113
0530	49 sq. in. to 76 sq. in. duct		40	1.600		7.25	82		89.25	136
0600	Pipe insulation, air cell type, up to 4" diameter pipe		900	.071	L.F.	.32	3.64		3.96	6
0610	4" to 8" diameter pipe		800	.080		.36	4.10		4.46	6.80
0620	10" to 12" diameter pipe		700	.091		.41	4.68		5.09	7.75
0630	14" to 16" diameter pipe		550	.116	▼	.53	5.95		6.48	9.85
0650	Over 16" diameter pipe		650	.098	S.F.	.44	5.05		5.49	8.35
0700	With glove bag up to 3" diameter pipe		200	.320	L.F.	8.95	16.40		25.35	35.50
1000	Pipe fitting insulation up to 4" diameter pipe		320	.200	Ea.	.90	10.25		11.15	16.95
1100	6" to 8" diameter pipe		304	.211		.95	10.80		11.75	17.85
1110	10" to 12" diameter pipe		192	.333		1.51	17.05		18.56	28
1120	14" to 16" diameter pipe		128	.500	▼	2.26	25.50		27.76	42.50
1130	Over 16" diameter pipe		176	.364	S.F.	1.64	18.60		20.24	31
1200	With glove bag, up to 8" diameter pipe		75	.853	L.F.	6.15	43.50		49.65	75
2000	Scrape foam fireproofing from flat surface		2400	.027	S.F.	.12	1.37		1.49	2.26
2100	Irregular surfaces		1200	.053		.24	2.73		2.97	4.51
3000	Remove cementitious material from flat surface		1800	.036		.16	1.82		1.98	3.01
3100	Irregular surface		1000	.064		.21	3.28		3.49	5.35
4000	Scrape acoustical coating/fireproofing, from ceiling		3200	.020		.09	1.02		1.11	1.69
5000	Remove VAT and mastic from floor by hand		2400	.027		.12	1.37		1.49	2.26
5100	By machine	A-11	4800	.013	▼	.06	.68	.01	.75	1.14
5150	For 2 layers, add				%				50%	50%
6000	Remove contaminated soil from crawl space by hand	A-9	400	.160	C.F.	.72	8.20		8.92	13.55
6100	With large production vacuum loader	A-12	700	.091	"	.41	4.68	1.10	6.19	8.95
7000	Radiator backing, not including radiator removal	A-9	1200	.053	S.F.	.24	2.73		2.97	4.51
8000	Cement-asbestos transite board and cement wall board	2 Asbe	1000	.016		.17	.82		.99	1.46
8100	Transite shingle siding	A-10B	750	.043		.28	2.19		2.47	3.71
8200	Shingle roofing	"	2000	.016		.08	.82		.90	1.37
8250	Built-up, no gravel, non-friable	B-2	1400	.029		.08	1.06		1.14	1.72
8260	Bituminous flashing	1 Rafc	300	.027		.08	1.04		1.12	1.87
8300	Asbestos millboard, flat board and VAT contaminated plywood	2 Asbe	1000	.016	▼	.08	.82		.90	1.36
9000	For type B (supplied air) respirator equipment, add				%				10%	10%

02 82 13.44 Demolition In Asbestos Contaminated Area

0010	DEMOLITION IN ASBESTOS CONTAMINATED AREA									
0200	Ceiling, including suspension system, plaster and lath	A-9	2100	.030	S.F.	.14	1.56		1.70	2.58
0210	Finished plaster, leaving wire lath		585	.109		.49	5.60		6.09	9.25

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.44 Demolition In Asbestos Contaminated Area		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0220	Suspended acaoustical tile	A-9	3500	.018	S.F.	.08	.94		1.02	1.55
0230	Concealed tile grid system		3000	.021		.10	1.09		1.19	1.81
0240	Metal pan grid system		1500	.043		.19	2.19		2.38	3.61
0250	Gypsum baard		2500	.026		.12	1.31		1.43	2.17
0260	Lighting fixtures up to 2' x 4'		72	.889	Ea.	4.01	45.50		49.51	75.50
0400	Partitions, non load bearing									
0410	Plaster, lath, and studs	A-9	690	.093	S.F.	1.02	4.75		5.77	8.50
0450	Gypsum baard and studs	"	1390	.046	"	.21	2.36		2.57	3.90
9000	For type B (supplied air) respirator equipment, add				%				10%	10%

02 82 13.45 OSHA Testing

0010	OSHA TESTING									
0100	Certified technician, minimum				Day				200	220
0110	Maximum								300	330
0120	Industrial hygienist, minimum								250	250
0130	Maximum								400	440
0200	Asbestos sampling and PCM analysis, NIOSH 7400, minimum	1 Asbe	8	1	Ea.	2.90	51		53.90	82.50
0210	Maximum		4	2		3.20	102		105.20	163
1000	Cleaned area samples		8	1		2.75	51		53.75	82.50
1100	PCM air sample analysis, NIOSH 7400, minimum		8	1		31	51		82	114
1110	Maximum		4	2		3.35	102		105.35	163
1200	TEM air sample analysis, NIOSH 7402, minimum								80	106
1210	Maximum								360	450

02 82 13.46 Decontamination of Asbestos Containment Area

0010	DECONTAMINATION OF ASBESTOS CONTAINMENT AREA									
0100	Spray exposed substrate with surfactant (bridging)									
0200	Flat surfaces	A-9	6000	.011	S.F.	.35	.55		.90	1.24
0250	Irregular surfaces		4000	.016	"	.30	.82		1.12	1.61
0300	Pipes, beams, and calumns		2000	.032	L.F.	.55	1.64		2.19	3.16
1000	Spray encapsulate polyethylene sheeting		8000	.008	S.F.	.33	.41		.74	1
1100	Roll down polyethylene sheeting		8000	.008	"		.41		.41	.64
1500	Bag polyethylene sheeting		400	.160	Ea.	.79	8.20		8.99	13.60
2000	Fine clean exposed substrate, with nylon brush		2400	.027	S.F.		1.37		1.37	2.13
2500	Wet wipe substrate		4800	.013			.68		.68	1.06
2600	Vacuum surfaces, fine brush		6400	.010			.51		.51	.80
3000	Structural demalitian									
3100	Wood stud walls	A-9	2800	.023	S.F.		1.17		1.17	1.82
3500	Window manifolds, nat incl. window replacement		4200	.015			.78		.78	1.21
3600	Plywood carpet protection		2000	.032			1.64		1.64	2.55
4000	Remove custom decontamination facility	A-10A	8	3	Ea.	15.10	154		169.10	257
4100	Remove portable decontamination facility	3 Asbe	12	2	"	12.80	102		114.80	173
5000	HEPA vacuum, shampaa carpeting	A-9	4800	.013	S.F.	.07	.68		.75	1.14
9000	Final cleaning af protected surfaces	A-10A	8000	.003	"		.15		.15	.24

02 82 13.47 Asbestos Waste Pkg., Handling, and Disp.

0010	ASBESTOS WASTE PACKAGING, HANDLING, AND DISPOSAL									
0100	Collect and bag bulk material, 3 C.F. bags, by hand	A-9	400	.160	Ea.	1.65	8.20		9.85	14.55
0200	Large production vacuum loader	A-12	880	.073		.84	3.72	.88	5.44	7.70
1000	Double bag and decontaminate	A-9	960	.067		1.65	3.41		5.06	7.10
2000	Containerize bagged material in drums, per 3 C.F. drum	"	800	.080		17.85	4.10		21.95	26
3000	Cart bags 50' to dumpster	2 Asbe	400	.040			2.05		2.05	3.18
5000	Disposal charges, nat including haul, minimum				C.Y.				61	67
5020	Maximum				"				355	395
9000	For type B (supplied air) respirator equipment, add				%				10%	10%

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.48 Asbestos Encapsulation With Sealants		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	ASBESTOS ENCAPSULATION WITH SEALANTS									
0100	Ceilings and walls, minimum	A-9	21000	.003	S.F.	.30	.16		.46	.57
0110	Maximum		10600	.006		.44	.31		.75	.96
0200	Columns and beams, minimum		13300	.005		.30	.25		.55	.71
0210	Maximum		5325	.012	▼	.50	.62		1.12	1.51
0300	Pipes to 12" diameter including minor repairs, minimum		800	.080	L.F.	.42	4.10		4.52	6.85
0310	Maximum	▼	400	.160	"	1.10	8.20		9.30	13.95

02 83 Lead Remediation

02 83 19 – Lead-Based Paint Remediation

02 83 19.21 Lead Paint Remediation Plans and Methods

0010	LEAD PAINT REMEDIATION PLANS AND METHODS									
0100	Building Survey-Commercial Building				EO.				2,050	2,250
0200	Lead Abatement Remediation Plan								1,225	1,350
0300	Lead Point Testing, AAS Analysis								51	56
0400	Lead Point Testing, X-Ray Fluorescence				▼				51	56

02 83 19.23 Encapsulation of Lead-Based Paint

0010	ENCAPSULATION OF LEAD-BASED PAINT									
0020	Interior, brushwork, trim, under 6"	1 Pord	240	.033	L.F.	2.25	1.32		3.57	4.46
0030	6" to 12" wide		180	.044		3	1.76		4.76	5.95
0040	Balustrades		300	.027		1.80	1.05		2.85	3.57
0050	Pipe to 4" diameter		500	.016		1.10	.63		1.73	2.16
0060	To 8" diameter		375	.021		1.45	.84		2.29	2.87
0070	To 12" diameter		250	.032		2.15	1.27		3.42	4.27
0080	To 16" diameter		170	.047	▼	3.20	1.86		5.06	6.30
0090	Cabinets, ornate design		200	.040	S.F.	2.75	1.58		4.33	5.40
0100	Simple design		250	.032	"	2.20	1.27		3.47	4.32
0110	Doors, 3' x 7', both sides, incl. frame & trim									
0120	Flush	1 Pord	6	1.333	EO.	27.50	52.50		80	110
0130	French, 10 – 15 lite		3	2.667		5.55	105		110.55	165
0140	Panel		4	2		33.50	79		112.50	156
0150	Louvered	▼	2.75	2.909	▼	30.50	115		145.50	207
0160	Windows, per interior side, per 15 S.F.									
0170	1 to 6 lite	1 Pord	14	.571	EO.	19	22.50		41.50	55
0180	7 to 10 lite		7.50	1.067		21	42		63	87
0190	12 lite		5.75	1.391		28.50	55		83.50	114
0200	Radiators		8	1	▼	67.50	39.50		107	134
0210	Grilles, vents		275	.029	S.F.	2	1.15		3.15	3.93
0220	Walls, roller, drywall or plaster		1000	.008		.55	.32		.87	1.09
0230	With spunbonded reinforcing fabric		720	.011		.62	.44		1.06	1.34
0240	Wood		800	.010		.68	.40		1.08	1.35
0250	Ceilings, roller, drywall or plaster		900	.009		.62	.35		.97	1.21
0260	Wood		700	.011	▼	.76	.45		1.21	1.52
0270	Exterior, brushwork, gutters and downspouts		300	.027	L.F.	1.80	1.05		2.85	3.57
0280	Columns		400	.020	S.F.	1.35	.79		2.14	2.68
0290	Spray, siding	▼	600	.013	"	.91	.53		1.44	1.79
0300	Miscellaneous									
0310	Electrical conduit, brushwork, to 2" diameter	1 Pord	500	.016	L.F.	1.10	.63		1.73	2.16
0320	Brick, block or concrete, spray		500	.016	S.F.	1.10	.63		1.73	2.16
0330	Steel, flat surfaces and tanks to 12"	▼	500	.016	▼	1.10	.63		1.73	2.16

02 83 Lead Remediation

02 83 19 – Lead-Based Paint Remediation

02 83 19.23 Encapsulation of Lead-Based Paint		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0340	Beams, brushwork	1 Pard	400	.020	S.F.	1.35	.79		2.14	2.68
0350	Trusses		400	.020		1.35	.79		2.14	2.68

02 83 19.26 Removal of Lead-Based Paint

0010	REMOVAL OF LEAD-BASED PAINT	R028319-60								
0011	By chemicals, per application									
0050	Baseboard, to 6" wide	1 Pard	64	.125	L.F.	.71	4.94		5.65	8.25
0070	To 12" wide		32	.250	"	1.37	9.90		11.27	16.40
0200	Balustrades, one side		28	.286	S.F.	1.42	11.30		12.72	18.55
1400	Cabinets, simple design		32	.250		1.28	9.90		11.18	16.30
1420	Ornate design		25	.320		1.55	12.65		14.20	21
1600	Carnice, simple design		60	.133		1.47	5.25		6.72	9.55
1620	Ornate design		20	.400		5.25	15.80		21.05	30
2800	Doors, one side, flush		84	.095		1.84	3.77		5.61	7.65
2820	Two panel		80	.100		1.28	3.96		5.24	7.35
2840	Four panel		45	.178		1.37	7.05		8.42	12.10
2880	Far trim, one side, add		64	.125	L.F.	.70	4.94		5.64	8.20
3000	Fence, picket, one side		30	.267	S.F.	1.28	10.55		11.83	17.25
3200	Grilles, one side, simple design		30	.267		1.30	10.55		11.85	17.30
3220	Ornate design		25	.320	▼	1.40	12.65		14.05	20.50
3240	Handrails		90	.089	L.F.	1.30	3.52		4.82	6.75
4400	Pipes, to 4" diameter		90	.089		1.84	3.52		5.36	7.30
4420	To 8" diameter		50	.160		3.68	6.35		10.03	13.55
4440	To 12" diameter		36	.222		5.50	8.80		14.30	19.25
4460	To 16" diameter		20	.400	▼	7.35	15.80		23.15	32
4500	Far hangers, add		40	.200	Ea.	2.44	7.90		10.34	14.60
4800	Siding		90	.089	S.F.	1.22	3.52		4.74	6.65
5000	Trusses, open		55	.145	SF Face	1.92	5.75		7.67	10.75
6200	Windows, one side only, double hung, 1/1 light, 24" x 48" high		4	2	Ea.	23	79		102	144
6220	30" x 60" high		3	2.667		30.50	105		135.50	193
6240	36" x 72" high		2.50	3.200		36.50	127		163.50	230
6280	40" x 80" high		2	4		45.50	158		203.50	288
6400	Colonial window, 6/6 light, 24" x 48" high		2	4		45.50	158		203.50	288
6420	30" x 60" high		1.50	5.333		61	211		272	380
6440	36" x 72" high		1	8		91	315		406	575
6480	40" x 80" high		1	8		91	315		406	575
6600	8/8 light, 24" x 48" high		2	4		45.50	158		203.50	288
6620	40" x 80" high		1	8		91	315		406	575
6800	12/12 light, 24" x 48" high		1	8		91	315		406	575
6820	40" x 80" high		.75	10.667	▼	122	420		542	770
6840	Window frame & trim items, included in pricing above									
7000	Hand scraping and HEPA vacuum, less than 4 S.F.	1 Pard	8	1	Ea.	1.65	39.50		41.15	61.50
8000	Collect and bag bulk material, 3 C.F. bags, by hand	"	30	.267	"	1.65	10.55		12.20	17.65

02 85 Mold Remediation

02 85 16 – Mold Remediation Preparation and Containment

02 85 16.40 Mold Remediation Plans and Methods		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	MOLD REMEDIATION PLANS AND METHODS									
0020	Initial inspection, areas to 2500 S.F.				Total				268	295
0030	Areas to 5000 S.F.								440	485
0032	Areas to 10000 S.F.								440	485
0040	Testing, air sample each								126	139
0050	Swab sample								115	127
0060	Tape sample								125	140
0070	Past remediation air test								126	139
0080	Mold abatement plan, area to 2500 S.F.								1,225	1,325
0090	Areas to 5000 S.F.								1,625	1,775
0095	Areas to 10000 S.F.								2,550	2,800
0100	Packup & removal of contents, average 3 bedroom home, excl storage								8,150	8,975
0110	Average 5 bedroom home, excl storage								15,300	16,800
0600	For demolition in mold contaminated areas, see Section 02 85 33.50									
0610	For personal protection equipment, see Section 02 82 13.41									

02 85 16.50 Preparation of Mold Containment Area

0010	PREPARATION OF MOLD CONTAINMENT AREA									
0100	Pre-cleaning, HEPA vacuum and wet wipe, flat surfaces	A-9	12000	.005	S.F.	.02	.27		.29	.45
0300	Separation barrier, 2" x 4" @ 16", 1/2" plywood ea. side, 8' high	2 Carp	400	.040		3.25	1.83		5.08	6.40
0310	12' high		320	.050		3.25	2.29		5.54	7.10
0320	16' high		200	.080		2.25	3.67		5.92	8.15
0400	Personnel decontam. chamber, 2" x 4" @ 16", 3/4" ply ea. side		280	.057		4.25	2.62		6.87	8.70
0450	Waste decontam. chamber, 2" x 4" studs @ 16", 3/4" ply each side		360	.044		4.25	2.04		6.29	7.80
0500	Cover surfaces with polyethylene sheeting									
0501	Including glue and tape									
0550	Floors, each layer, 6 mil	A-9	8000	.008	S.F.	.04	.41		.45	.69
0551	4 mil		9000	.007		.03	.36		.39	.60
0560	Walls, each layer, 6 mil		6000	.011		.04	.55		.59	.90
0561	4 mil		7000	.009		.03	.47		.50	.76
0570	For heights above 12', add						20%			
0575	For heights above 20', add						30%			
0580	For fire retardant poly, add					100%				
0590	For large open areas, deduct					10%	20%			
0600	Seal floor penetrations with foam firestop to 36 sq. in.	2 Carp	200	.080	Ea.	9.25	3.67		12.92	15.85
0610	36 sq. in. to 72 sq. in.		125	.128		18.50	5.85		24.35	29.50
0615	72 sq. in. to 144 sq. in.		80	.200		37	9.15		46.15	55
0620	Wall penetrations, to 36 square inches		180	.089		9.25	4.08		13.33	16.50
0630	36 sq. in. to 72 sq. in.		100	.160		18.50	7.35		25.85	32
0640	72 sq. in. to 144 sq. in.		60	.267		37	12.25		49.25	60
0800	Caulk seams with latex caulk	1 Carp	230	.035	L.F.	.17	1.59		1.76	2.65
0900	Set up neg. air machine, 1-2k CFM/25 M.C.F. volume	1 Asbe	4.30	1.860	Ea.		95		95	148

02 85 33 – Removal and Disposal of Materials with Mold

02 85 33.50 Demolition in Mold Contaminated Area

0010	DEMOLITION IN MOLD CONTAMINATED AREA									
0200	Ceiling, including suspension system, plaster and lath	A-9	2100	.030	S.F.	.14	1.56		1.70	2.58
0210	Finished plaster, leaving wire lath		585	.109		.49	5.60		6.09	9.25
0220	Suspended acoustical tile		3500	.018		.08	.94		1.02	1.55
0230	Concealed tile grid system		3000	.021		.10	1.09		1.19	1.81
0240	Metal pan grid system		1500	.043		.19	2.19		2.38	3.61
0250	Gypsum board		2500	.026		.12	1.31		1.43	2.17
0255	Plywood		2500	.026		.12	1.31		1.43	2.17
0260	Lighting fixtures up to 2' x 4'		72	.889	Ea.	4.01	45.50		49.51	75.50

02 85 Mold Remediation

02 85 33 – Removal and Disposal of Materials with Mold

02 85 33.50 Demolition in Mold Contaminated Area		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0400	Portitions, non load bearing									
0410	Plaster, loth, and studs	A-9	690	.093	S.F.	1.02	4.75		5.77	8.50
0450	Gypsum board and studs		1390	.046		.21	2.36		2.57	3.90
0465	Corpet & pod		1390	.046		.21	2.36		2.57	3.90
0600	Pipe insulation, air cell type, up to 4" diometer pipe		900	.071	L.F.	.32	3.64		3.96	6
0610	4" to 8" diometer pipe		800	.080		.36	4.10		4.46	6.80
0620	10" to 12" diometer pipe		700	.091		.41	4.68		5.09	7.75
0630	14" to 16" diometer pipe		550	.116		.53	5.95		6.48	9.85
0650	Over 16" diometer pipe		650	.098	S.F.	.44	5.05		5.49	8.35
9000	For type B (supplied oir) respiratar equipment, add				%				10%	10%

02 91 Chemical Sampling, Testing and Analysis

02 91 10 – Monitoring, Sampling, Testing and Analysis

02 91 10.10 Monitoring, Chemical Sampling, Testing and Analysis

0010	MONITORING, CHEMICAL SAMPLING, TESTING AND ANALYSIS									
0015	Field Sampling of waste									
0100	Field samples, sample collection, sludge	1 Skwk	32	.250	Ea.		11.85		11.85	18.30
0110	Contaminated soils	"	32	.250	"		11.85		11.85	18.30
0200	Vials and bottles									
0210	32 oz. clear wide mouth jar (case of 12)				Ea.	42			42	46
0220	32 oz. Bastan round bottle (case of 12)					37			37	41
0230	32 oz. HDPE bottle (case of 12)				▼	35.50			35.50	39
0300	Laboratory onalytical services									
0310	Laboratory testing 13 metols				Ea.	182			182	200
0312	13 metols + mercury					215			215	237
0314	8 metols					156			156	172
0316	Mercury only					41			41	45
0318	Single metol (only Cs, Li, Sr, To)					42			42	46
0320	Single metol (excludes Hg, Cs, Li, Sr, To)					42			42	46
0400	Hydracarbons stondord					87			87	95.50
0410	Hydracarbans fingerprint					157			157	173
0500	Radioactivity grass alpha					150			150	165
0510	Gross alphi & beta					150			150	165
0520	Rodium 226					85			85	93.50
0530	Rodium 228					125			125	138
0540	Rodan					144			144	158
0550	Uranium					88			88	97
0600	Volatile organics without GC/MS					153			153	168
0610	Volatile organics including GC/MS					175			175	193
0630	Synthetic argonic compaunds					1,000			1,000	1,100
0640	Herbicides					210			210	231
0650	Pesticides					148			148	162
0660	PCB's				▼	135			135	149

Division Notes

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Estimating Tips

General

- Carefully check all the plans and specifications. Concrete often appears on drawings other than structural drawings, including mechanical and electrical drawings for equipment pads. The cost of cutting and patching is often difficult to estimate. See Subdivision 03 81 for Concrete Cutting, Subdivision 02 41 19.16 for Cutout Demolition, Subdivision 03 05 05.10 for Concrete Demolition, and Subdivision 02 41 19.19 for Rubbish Handling (handling, loading and hauling of debris).
- Always obtain concrete prices from suppliers near the job site. A volume discount can often be negotiated, depending upon competition in the area. Remember to add for waste, particularly for slabs and footings on grade.

03 10 00 Concrete Forming and Accessories

- A primary cost for concrete construction is forming. Most jobs today are constructed with prefabricated forms. The selection of the forms best suited for the job and the total square feet of forms required for efficient concrete forming and placing are key elements in estimating concrete construction. Enough forms must be available for erection to make efficient use of the concrete placing equipment and crew.

- Concrete accessories for forming and placing depend upon the systems used. Study the plans and specifications to ensure that all special accessory requirements have been included in the cost estimate, such as anchor bolts, inserts, and hangers.
- Included within costs for forms-in-place are all necessary bracing and shoring.

03 20 00 Concrete Reinforcing

- Ascertain that the reinforcing steel supplier has included all accessories, cutting, bending, and an allowance for lapping, splicing, and waste. A good rule of thumb is 10% for lapping, splicing, and waste. Also, 10% waste should be allowed for welded wire fabric.
- The unit price items in the subdivisions for Reinforcing In Place, Glass Fiber Reinforcing, and Welded Wire Fabric include the labor to install accessories such as beam and slab bolsters, high chairs, and bar ties and tie wire. The material cost for these accessories is not included; they may be obtained from the Accessories Division.

03 30 00 Cast-In-Place Concrete

- When estimating structural concrete, pay particular attention to requirements for concrete additives, curing methods, and surface treatments. Special consideration for climate, hot or cold, must be included in your estimate. Be sure to include requirements for concrete placing equipment, and concrete finishing.

- For accurate concrete estimating, the estimator must consider each of the following major components individually: forms, reinforcing steel, ready-mix concrete, placement of the concrete, and finishing of the top surface. For faster estimating, Subdivision 03 30 53.40 for Concrete-In-Place can be used; here, various items of concrete work are presented that include the costs of all five major components (unless specifically stated otherwise).

03 40 00 Precast Concrete

03 50 00 Cast Decks and Underlayment

- The cost of hauling precast concrete structural members is often an important factor. For this reason, it is important to get a quote from the nearest supplier. It may become economically feasible to set up precasting beds on the site if the hauling costs are prohibitive.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

03 01 Maintenance of Concrete

03 01 30 – Maintenance of Cast-In-Place Concrete

03 01 30.62 Concrete Patching		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 CONCRETE PATCHING							Labor	Equipment		
0100	Floors, 1/4" thick, small areas, regular grout	1 Cefi	170	.047	S.F.	1.42	2.07		3.49	4.62
0150	Epoxy grout	"	100	.080	"	7.80	3.52		11.32	13.75
2000	Walls, including chipping, cleaning and epoxy grout									
2100	1/4" deep	1 Cefi	65	.123	S.F.	7.20	5.40		12.60	15.90
2150	1/2" deep		50	.160		14.40	7.05		21.45	26.50
2200	3/4" deep	▼	40	.200	▼	21.50	8.80		30.30	37

03 05 Common Work Results for Concrete

03 05 05 – Selective Concrete Demolition

03 05 05.10 Selective Demolition, Concrete

0010	SELECTIVE DEMOLITION, CONCRETE	R024119-10								
0012	Excludes saw cutting, torch cutting, loading or hauling									
0050	Break into small pieces, reinf. less than 1% of cross-sectional area	B-9	24	1.667	C.Y.		62	9.75	71.75	106
0060	Reinforcing 1% to 2% of cross-sectional area		16	2.500			92.50	14.60	107.10	159
0070	Reinforcing more than 2% of cross-sectional area	▼	8	5	▼		185	29	214	320
0150	Remove whole pieces, up to 2 tons per piece	E-18	36	1.111	EO.		56.50	26.50	83	127
0160	2 – 5 tons per piece		30	1.333			68	32	100	152
0170	5 – 10 tons per piece		24	1.667			85	40	125	190
0180	10 – 15 tons per piece		18	2.222			113	53.50	166.50	254
0250	Precast unit embedded in masonry, up to 1 C.F.	D-1	16	1			41.50		41.50	63
0260	1 – 2 C.F.		12	1.333			55		55	84
0270	2 – 5 C.F.		10	1.600			66		66	101
0280	5 – 10 C.F.	▼	8	2	▼		82.50		82.50	126
0990	For hydrodemolition see Section 02 41 13.15									

03 05 13 – Basic Concrete Materials

03 05 13.20 Concrete Admixtures and Surface Treatments

0010	CONCRETE ADMIXTURES AND SURFACE TREATMENTS									
0040	Abrasives, aluminum oxide, over 20 tons				Lb.	1.82			1.82	2
0050	1 to 20 tons					1.95			1.95	2.14
0070	Under 1 ton					2.03			2.03	2.23
0100	Silican carbide, block, over 20 tons					2.78			2.78	3.06
0110	1 to 20 tons					2.96			2.96	3.25
0120	Under 1 ton				▼	3.08			3.08	3.39
0200	Air entraining agent, .7 to 1.5 oz. per bag, 55 gallon drum				Gol.	13.35			13.35	14.65
0220	5 gallon pail					18.35			18.35	20
0300	Bonding agent, acrylic latex, 250 S.F. per gallon, 5 gallon pail					22			22	24.50
0320	Epoxy resin, 80 S.F. per gallon, 4 gallon case				▼	61.50			61.50	67.50
0400	Calcium chloride, 50 lb. bags, TL lots				Ton	770			770	845
0420	Less than truckload lots				Bog	23.50			23.50	25.50
0500	Carbon black, liquid, 2 to 8 lb. per bag of cement				Lb.	8.65			8.65	9.55
0600	Colored pigments, integral, 2 to 10 lb. per bag of cement, subtle colors					2.40			2.40	2.64
0610	Standard colors					3.25			3.25	3.58
0620	Premium colors				▼	5.40			5.40	5.95
0920	Dustproofing compound, 250 S.F./gal., 5 gallon pail				Gol.	6.20			6.20	6.80
1010	Epoxy based, 125 S.F./gal., 5 gallon pail				"	53			53	58
1100	Hardeners, metallic, 55 lb. bags, noturol (grey)				Lb.	.66			.66	.73
1200	Colors					2.17			2.17	2.38
1300	Non-metallic, 55 lb. bags, noturol grey					.41			.41	.45
1320	Colors				▼	.90			.90	.99

03 05 Common Work Results for Concrete

03 05 13 – Basic Concrete Materials

03 05 13.20 Concrete Admixtures and Surface Treatments			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
1550	Release agent, for tilt slabs, 5 gallon pail					Gal.	16.20			16.20	17.80
1570	Far farms, 5 gallon pail						13.35			13.35	14.70
1590	Concrete release agent for farms, 100% biodegradeable, zero VOC, 5 gal pail	G					19.20			19.20	21
1595	55 gallon drum	G					15.75			15.75	17.35
1600	Sealer, hardener and dustproofer, epoxy-based, 125 S.F./gal., 5 gallon unit						53			53	58
1620	3 gallon unit						58			58	64
1630	Sealer, solvent-based, 250 S.F./gal., 55 gallon drum						23.50			23.50	25.50
1640	5 gallon pail						29.50			29.50	32.50
1650	Sealer, water based, 350 S.F., 55 gallon drum						22			22	24.50
1660	5 gallon pail						25			25	27.50
1900	Set retarder, 100 S.F./gal., 1 gallon pail						22			22	24
2000	Waterproofing, integral 1 lb. per bag of cement					Lb.	2.02			2.02	2.22
2100	Powdered metallic, 40 lb. per 100 S.F., standard colors						2.40			2.40	2.64
2120	Premium colors						3.36			3.36	3.70
3000	Far integral colored pigments, 2500 psi (5 bag mix)										
3100	Standard colors, 1.8 lb. per bag, add					C.Y.	21.50			21.50	24
3200	9.4 lb. per bag, add						113			113	124
3400	Premium colors, 1.8 lb. per bag, add						29.50			29.50	32
3500	7.5 lb. per bag, add						122			122	134
3700	Ultra premium colors, 1.8 lb. per bag, add						48.50			48.50	53.50
3800	7.5 lb. per bag, add						203			203	223
6000	Concrete ready mix additives, recycled coal fly ash, mixed at plant	G				Ton	57			57	62.50
6010	Recycled blast furnace slag, mixed at plant	G				"	87.50			87.50	96.50

03 05 13.25 Aggregate

0010	AGGREGATE	R033105-20									
0100	Lightweight vermiculite or perlite, 4 C.F. bag, C.L. lots	G				Bag	23.50			23.50	26
0150	L.C.L. lots	R033105-40				"	26.50			26.50	29
0250	Sand & stone, loaded at pit, crushed bank gravel					Ton	21			21	23
0350	Sand, washed, for concrete	R033105-50					17.40			17.40	19.15
0400	Far plaster or brick						17.40			17.40	19.15
0450	Stone, 3/4" to 1-1/2"						16.85			16.85	18.50
0470	Round, river stone						26.50			26.50	29
0500	3/8" roofing stone & 1/2" pea stone						26			26	28.50
0550	Far trucking 10-mile round trip, add to the above		B-34B	117	.068			2.57	5.90	8.47	10.40
0600	Far trucking 30-mile round trip, add to the above		"	72	.111			4.17	9.60	13.77	16.95
0850	Sand & stone, loaded at pit, crushed bank gravel					C.Y.	29.50			29.50	32.50
0950	Sand, washed, for concrete						24			24	26.50
1000	Far plaster or brick						24			24	26.50
1050	Stone, 3/4" to 1-1/2"						32			32	35.50
1055	Round, river stone						36			36	39.50
1100	3/8" roofing stone & 1/2" pea stone						24			24	26
1150	Far trucking 10-mile round trip, add to the above		B-34B	78	.103			3.85	8.85	12.70	15.65
1200	Far trucking 30-mile round trip, add to the above		"	48	.167			6.25	14.40	20.65	25.50
1310	Onyx chips, 50 lb. bags					Cwt.	33			33	36.50
1330	Quartz chips, 50 lb. bags						12.30			12.30	13.55
1410	White marble, 3/8" to 1/2", 50 lb. bags						8.25			8.25	9.10
1430	3/4", bulk					Ton	117			117	129

03 05 13.30 Cement

0010	CEMENT	R033105-20									
0240	Portland, Type I/II, TL lots, 94 lb. bags					Bag	9.65			9.65	10.65
0250	LTL/LCL lots	R033105-30				"	10.70			10.70	11.80
0300	Trucked in bulk, per Cwt.					Cwt.	8.30			8.30	9.10

03 05 Common Work Results for Concrete

03 05 13 – Basic Concrete Materials

03 05 13.30 Cement				Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0400	Type III, high early strength, TL lots, 94 lb. bags	R033105-40					Bog	12.55			12.55	13.80
0420	L.T.L. or L.C.L. lots							13.95			13.95	15.35
0500	White, type III, high early strength, T.L. or C.L. lots, bags	R033105-50						25			25	27.50
0520	L.T.L. or L.C.L. lots							28			28	30.50
0600	White, type I, T.L. or C.L. lots, bags							23			23	25
0620	L.T.L. or L.C.L. lots							24			24	26.50

03 05 13.80 Waterproofing and Dampproofing

0010	WATERPROOFING AND DAMPPROOFING											
0050	Integral waterproofing, add to cost of regular concrete						C.Y.	12.10			12.10	13.35

03 05 13.85 Winter Protection

0010	WINTER PROTECTION											
0012	For heated ready mix, add						C.Y.	4.50			4.50	4.95
0100	Temporary heat to protect concrete, 24 hours		2 Clab	50	.320	M.S.F.	535	11.75			546.75	605
0200	Temporary shelter for slab on grade, wood frame/polyethylene sheeting											
0201	Build or remove, light framing for short spans		2 Corp	10	1.600	M.S.F.	284	73.50			357.50	425
0210	Large framing for long spans		"	3	5.333	"	380	245			625	795
0500	Electrically heated pads, 110 volts, 15 watts per S.F., buy					S.F.	10.35				10.35	11.35
0600	20 watts per S.F., buy						13.75				13.75	15.10
0710	Electrically, heated pads, 15 watts/S.F., 20 uses						.52				.52	.57

03 11 Concrete Forming

03 11 13 – Structural Cast-In-Place Concrete Forming

03 11 13.20 Forms In Place, Beams and Girders

0010	FORMS IN PLACE, BEAMS AND GIRDERS											
0500	Exterior spondrel, job-built plywood, 12" wide, 1 use	R031113-40										
0550	2 use											
0600	3 use											
0650	4 use											
1000	18" wide, 1 use											
1050	2 use											
1100	3 use											
1150	4 use											
1500	24" wide, 1 use											
1550	2 use											
1600	3 use											
1650	4 use											
2000	Interior beam, job-built plywood, 12" wide, 1 use											
2050	2 use											
2100	3 use											
2150	4 use											
2500	24" wide, 1 use											
2550	2 use											
2600	3 use											
2650	4 use											
3000	Encasing steel beam, hung, job-built plywood, 1 use											
3050	2 use											
3100	3 use											
3150	4 use											
3500	Bottoms only, to 30" wide, job-built plywood, 1 use											
3550	2 use											

03 11 Concrete Forming

03 11 13 – Structural Cast-In-Place Concrete Forming

03 11 13.20 Forms In Place, Beams and Girders		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3600	3 use	C-2	280	.171	SFCA	1.59	7.65		9.24	13.55
3650	4 use		290	.166		1.29	7.40		8.69	12.80
4000	Sides only, vertical, 36" high, job-built plywood, 1 use		335	.143		5.10	6.40		11.50	15.45
4050	2 use		405	.119		2.80	5.30		8.10	11.25
4100	3 use		430	.112		2.04	4.98		7.02	9.95
4150	4 use		445	.108		1.65	4.82		6.47	9.25
4500	Slaped sides, 36" high, 1 use		305	.157		4.92	7.05		11.97	16.25
4550	2 use		370	.130		2.74	5.80		8.54	11.95
4600	3 use		405	.119		1.97	5.30		7.27	10.30
4650	4 use		425	.113		1.60	5.05		6.65	9.55
5000	Upstanding beams, 36" high, 1 use		225	.213		6.25	9.55		15.80	21.50
5050	2 use		255	.188		3.47	8.40		11.87	16.75
5100	3 use		275	.175		2.51	7.80		10.31	14.80
5150	4 use		280	.171		2.04	7.65		9.69	14.05

03 11 13.25 Forms In Place, Columns

0010	FORMS IN PLACE, COLUMNS	R031113-40								
0500	Round fiberglass, 4 use per ma., rent, 12" diameter		C-1	160	.200	L.F.	8.15	8.70	16.85	22.50
0550	16" diameter	R031113-60		150	.213		9.70	9.30	19	25
0600	18" diameter			140	.229		10.85	9.95	20.80	27.50
0650	24" diameter			135	.237		13.50	10.30	23.80	31
0700	28" diameter			130	.246		15.10	10.70	25.80	33
0800	30" diameter			125	.256		15.75	11.15	26.90	34.50
0850	36" diameter			120	.267		21	11.60	32.60	41
1500	Round fiber tube, recycled paper, 1 use, 8" diameter	G		155	.206		1.66	9	10.66	15.70
1550	10" diameter	G		155	.206		2.24	9	11.24	16.30
1600	12" diameter	G		150	.213		2.60	9.30	11.90	17.20
1650	14" diameter	G		145	.221		3.77	9.60	13.37	19
1700	16" diameter	G		140	.229		4.52	9.95	14.47	20.50
1720	18" diameter	G		140	.229		5.30	9.95	15.25	21
1750	20" diameter	G		135	.237		7.30	10.30	17.60	24
1800	24" diameter	G		130	.246		9.30	10.70	20	27
1850	30" diameter	G		125	.256		13.60	11.15	24.75	32
1900	36" diameter	G		115	.278		17.05	12.10	29.15	37.50
1950	42" diameter	G		100	.320		42	13.95	55.95	68
2000	48" diameter	G		85	.376		48.50	16.40	64.90	79
2200	For seamless type, add						15%			
3000	Round, steel, 4 use per ma., rent, regular duty, 14" diameter	G	C-1	145	.221	L.F.	17.55	9.60	27.15	34
3050	16" diameter	G		125	.256		17.90	11.15	29.05	37
3100	Heavy duty, 20" diameter	G		105	.305		19.75	13.25	33	42
3150	24" diameter	G		85	.376		21.50	16.40	37.90	49
3200	30" diameter	G		70	.457		25	19.90	44.90	57.50
3250	36" diameter	G		60	.533		26.50	23	49.50	65
3300	48" diameter	G		50	.640		39.50	28	67.50	86.50
3350	60" diameter	G		45	.711		48.50	31	79.50	102
4500	For second and succeeding months, deduct						50%			
5000	Job-built plywood, 8" x 8" columns, 1 use		C-1	165	.194	SFCA	2.67	8.45	11.12	16
5050	2 use			195	.164		1.53	7.15	8.68	12.75
5100	3 use			210	.152		1.07	6.65	7.72	11.45
5150	4 use			215	.149		.88	6.50	7.38	10.95
5500	12" x 12" columns, 1 use			180	.178		2.56	7.75	10.31	14.75
5550	2 use			210	.152		1.41	6.65	8.06	11.80
5600	3 use			220	.145		1.02	6.35	7.37	10.90

03 11 Concrete Forming

03 11 13 – Structural Cast-In-Place Concrete Forming

03 11 13.25 Forms In Place, Columns		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5650	4 use	C-1	225	.142	SFCA	.83	6.20		7.03	10.45
6000	16" x 16" columns, 1 use		185	.173		2.55	7.55		10.10	14.40
6050	2 use		215	.149		1.36	6.50		7.86	11.50
6100	3 use		230	.139		1.02	6.05		7.07	10.50
6150	4 use		235	.136		.83	5.95		6.78	10.05
6500	24" x 24" columns, 1 use		190	.168		2.87	7.35		10.22	14.45
6550	2 use		216	.148		1.58	6.45		8.03	11.70
6600	3 use		230	.139		1.15	6.05		7.20	10.60
6650	4 use		238	.134		.93	5.85		6.78	10.10
7000	36" x 36" columns, 1 use		200	.160		2.30	6.95		9.25	13.30
7050	2 use		230	.139		1.30	6.05		7.35	10.80
7100	3 use		245	.131		.92	5.70		6.62	9.80
7150	4 use		250	.128		.75	5.55		6.30	9.40
7400	Steel framed plywood, based on 50 uses of purchased									
7420	forms, and 4 uses of brocing lumber									
7500	8" x 8" column	C-1	340	.094	SFCA	2.11	4.10		6.21	8.60
7550	10" x 10"		350	.091		1.84	3.98		5.82	8.15
7600	12" x 12"		370	.086		1.56	3.77		5.33	7.50
7650	16" x 16"		400	.080		1.22	3.48		4.70	6.75
7700	20" x 20"		420	.076		1.08	3.32		4.40	6.30
7750	24" x 24"		440	.073		.78	3.17		3.95	5.75
7755	30" x 30"		440	.073		.99	3.17		4.16	6
7760	36" x 36"		460	.070		.87	3.03		3.90	5.65

03 11 13.30 Forms In Place, Culvert

0010	FORMS IN PLACE, CULVERT	R031113-40								
0015	5' to 8' square or rectangular, 1 use		C-1	170	.188	SFCA	3.98	8.20	12.18	17
0050	2 use	R031113-60		180	.178		2.39	7.75	10.14	14.60
0100	3 use			190	.168		1.86	7.35	9.21	13.35
0150	4 use			200	.160		1.59	6.95	8.54	12.50

03 11 13.35 Forms In Place, Elevated Slabs

0010	FORMS IN PLACE, ELEVATED SLABS	R031113-40								
1000	Flat plate, job-built plywood, to 15' high, 1 use	R031113-60	C-2	470	.102	S.F.	3.64	4.56	8.20	11.05
1050	2 use			520	.092		2	4.12	6.12	8.55
1100	3 use			545	.088		1.46	3.93	5.39	7.65
1150	4 use			560	.086		1.18	3.83	5.01	7.20
1500	15' to 20' high ceilings, 4 use			495	.097		1.25	4.33	5.58	8.05
1600	21' to 35' high ceilings, 4 use			450	.107		1.55	4.76	6.31	9.05
2000	Flat slab, drop panels, job-built plywood, to 15' high, 1 use			449	.107		4.20	4.77	8.97	11.95
2050	2 use			509	.094		2.31	4.21	6.52	9.05
2100	3 use			532	.090		1.68	4.03	5.71	8.05
2150	4 use			544	.088		1.37	3.94	5.31	7.60
2250	15' to 20' high ceilings, 4 use			480	.100		2.43	4.47	6.90	9.55
2350	20' to 35' high ceilings, 4 use			435	.110		2.73	4.93	7.66	10.60
3000	Floor slab hung from steel beams, 1 use			485	.099		2.72	4.42	7.14	9.80
3050	2 use			535	.090		2.09	4.01	6.10	8.50
3100	3 use			550	.087		1.87	3.90	5.77	8.05
3150	4 use			565	.085		1.77	3.79	5.56	7.80
3500	Floor slab, with 1-way joist pans, 1 use			415	.116		5.95	5.15	11.10	14.50
3550	2 use			445	.108		4.07	4.82	8.89	11.95
3600	3 use			475	.101		3.44	4.51	7.95	10.75
3650	4 use			500	.096		3.12	4.29	7.41	10.05
4500	With 2-way waffle domes, 1 use			405	.119		6.10	5.30	11.40	14.85

03 11 Concrete Forming

03 11 13 – Structural Cast-In-Place Concrete Forming

03 11 13.35 Forms In Place, Elevated Slabs		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4520	2 use	C-2	450	.107	S.F.	4.20	4.76		8.96	11.95
4530	3 use		460	.104		3.57	4.66		8.23	11.10
4550	4 use		470	.102		3.25	4.56		7.81	10.65
5000	Box out for slab apenings, over 16" deep, 1 use		190	.253	SFCA	4.14	11.30		15.44	22
5050	2 use		240	.200	"	2.28	8.95		11.23	16.30
5500	Shallow slab box outs, to 10 S.F.		42	1.143	Ea.	10.50	51		61.50	90
5550	Over 10 S.F. (use perimeter)		600	.080	L.F.	1.41	3.57		4.98	7.05
6000	Bulkhead farms for slab, with keyway, 1 use, 2 piece		500	.096		1.95	4.29		6.24	8.75
6100	3 piece (see also edge farms)		460	.104		2.14	4.66		6.80	9.55
6200	Slab bulkhead farm, 4-1/2" high, exp metal, w/keyway & stakes	G	C-1	1200	.027	.88	1.16		2.04	2.76
6210	5-1/2" high	G		1100	.029	1.01	1.27		2.28	3.06
6215	7-1/2" high	G		960	.033	1.25	1.45		2.70	3.62
6220	9-1/2" high	G		840	.038	1.36	1.66		3.02	4.06
6500	Curb farms, waad, 6" to 12" high, an elevated slabs, 1 use		180	.178	SFCA	1.51	7.75		9.26	13.60
6550	2 use		205	.156		.83	6.80		7.63	11.40
6600	3 use		220	.145		.60	6.35		6.95	10.40
6650	4 use		225	.142		.49	6.20		6.69	10.10
7000	Edge farms to 6" high, an elevated slab, 4 use		500	.064	L.F.	.18	2.79		2.97	4.50
7070	7" to 12" high, 1 use		162	.198	SFCA	1.14	8.60		9.74	14.50
7080	2 use		198	.162		.62	7.05		7.67	11.55
7090	3 use		222	.144		.45	6.30		6.75	10.20
7101	4 use		350	.091		.18	3.98		4.16	6.35
7500	Depressed area farms to 12" high, 4 use		300	.107	L.F.	.92	4.65		5.57	8.15
7550	12" to 24" high, 4 use		175	.183		1.26	7.95		9.21	13.70
8000	Perimeter deck and rail for elevated slabs, straight		90	.356		12	15.50		27.50	37
8050	Curved		65	.492	▼	16.45	21.50		37.95	51
8500	Vaid farms, round plastic, 8" high x 3" diameter	G		450	.071	Ea.	2.08	3.10	5.18	7.05
8550	4" diameter	G		425	.075	3.23	3.28		6.51	8.60
8600	6" diameter	G		400	.080	5.05	3.48		8.53	10.95
8650	8" diameter	G		375	.085	8.80	3.72		12.52	15.40

03 11 13.40 Forms In Place, Equipment Foundations

0010	FORMS IN PLACE, EQUIPMENT FOUNDATIONS	R031113-40								
0020	1 use		C-2	160	.300	SFCA	3.09	13.40	16.49	24
0050	2 use	R031113-60		190	.253		1.70	11.30	13	19.25
0100	3 use			200	.240		1.24	10.70	11.94	17.90
0150	4 use		▼	205	.234	▼	1.01	10.45	11.46	17.25

03 11 13.45 Forms In Place, Footings

0010	FORMS IN PLACE, FOOTINGS	R031113-40								
0020	Continuous wall, plywood, 1 use		C-1	375	.085	SFCA	6.25	3.72	9.97	12.60
0050	2 use	R031113-60		440	.073		3.42	3.17	6.59	8.65
0100	3 use			470	.068		2.49	2.97	5.46	7.30
0150	4 use			485	.066	▼	2.03	2.87	4.90	6.65
0500	Dawel supports for footings or beams, 1 use			500	.064	L.F.	.84	2.79	3.63	5.20
1000	Integral starter wall, to 4" high, 1 use		▼	400	.080		.84	3.48	4.32	6.30
1500	Keyway, 4 use, tapered waad, 2" x 4"		1 Carp	530	.015		.20	.69	.89	1.29
1550	2" x 6"			500	.016		.28	.73	1.01	1.44
2000	Tapered plastic			530	.015		1.24	.69	1.93	2.43
2250	For keyway hung from supports, add		▼	150	.053	▼	.84	2.45	3.29	4.69
3000	Pile cap, square or rectangular, jab-built plywood, 1 use		C-1	290	.110	SFCA	2.79	4.81	7.60	10.45
3050	2 use			346	.092		1.53	4.03	5.56	7.90
3100	3 use			371	.086		1.12	3.76	4.88	7.05
3150	4 use		▼	383	.084	▼	.91	3.64	4.55	6.60

03 11 Concrete Forming

03 11 13 – Structural Cast-In-Place Concrete Forming

03 11 13.45 Forms In Place, Footings

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
4000	Triangular or hexagonal, 1 use	C-1	225	.142	SFCA	3.26	6.20		9.46	13.15
4050	2 use		280	.114		1.79	4.98		6.77	9.65
4100	3 use		305	.105		1.30	4.57		5.87	8.50
4150	4 use		315	.102		1.06	4.42		5.48	8
5000	Spread footings, job-built lumber, 1 use		305	.105		2	4.57		6.57	9.25
5050	2 use		371	.086		1.11	3.76		4.87	7
5100	3 use		401	.080		.80	3.48		4.28	6.25
5150	4 use		414	.077	▼	.65	3.37		4.02	5.90
6000	Supports for dowels, plinths or templates, 2' x 2' footing		25	1.280	Eq.	6.05	55.50		61.55	92.50
6050	4' x 4' footing		22	1.455		12.10	63.50		75.60	111
6100	8' x 8' footing		20	1.600		24	69.50		93.50	135
6150	12' x 12' footing		17	1.882		34	82		116	163
7000	Plinths, job-built plywood, 1 use		250	.128	SFCA	3.53	5.55		9.08	12.50
7100	4 use	▼	270	.119	"	1.16	5.15		6.31	9.20

03 11 13.47 Forms In Place, Gas Station Forms

0010	FORMS IN PLACE, GAS STATION FORMS									
0050	Curb fascio, with template, 12 ga. steel, left in place, 9" high		1 Corp	50	.160	L.F.	13.90	7.35	21.25	26.50
1000	Sign or light bases, 18" diameter, 9" high			9	.889	Eq.	87.50	41	128.50	159
1050	30" diameter, 13" high		▼	8	1		139	46	185	224
2000	Island forms, 10' long, 9" high, 3'-6" wide		C-1	10	3.200		390	139	529	640
2050	4' wide			9	3.556		400	155	555	680
2500	20' long, 9" high, 4' wide			6	5.333		645	232	877	1,075
2550	5' wide		▼	5	6.400	▼	670	279	949	1,175

03 11 13.50 Forms In Place, Grade Beam

0010	FORMS IN PLACE, GRADE BEAM	R031113-40								
0020	Job-built plywood, 1 use		C-2	530	.091	SFCA	2.82	4.04	6.86	9.35
0050	2 use	R031113-60		580	.083		1.55	3.70	5.25	7.40
0100	3 use			600	.080		1.13	3.57	4.70	6.75
0150	4 use		▼	605	.079	▼	.92	3.54	4.46	6.45

03 11 13.55 Forms In Place, Mat Foundation

0010	FORMS IN PLACE, MAT FOUNDATION	R031113-40								
0020	Job-built plywood, 1 use		C-2	290	.166	SFCA	2.89	7.40	10.29	14.60
0050	2 use	R031113-60		310	.155		1.10	6.90	8	11.85
0100	3 use			330	.145		.71	6.50	7.21	10.80
0120	4 use		▼	350	.137	▼	.65	6.10	6.75	10.15

03 11 13.65 Forms In Place, Slab On Grade

0010	FORMS IN PLACE, SLAB ON GRADE	R031113-40								
1000	Bulkhead forms w/keyway, wood, 6" high, 1 use		C-1	510	.063	L.F.	.93	2.73	3.66	5.25
1050	2 uses	R031113-60		400	.080		.51	3.48	3.99	5.95
1100	4 uses			350	.091		.30	3.98	4.28	6.50
1400	Bulkhead form for slob, 4-1/2" high, exp metal, incl keyway & stakes			1200	.027		.88	1.16	2.04	2.76
1410	5-1/2" high			1100	.029		1.01	1.27	2.28	3.06
1420	7-1/2" high			960	.033		1.25	1.45	2.70	3.62
1430	9-1/2" high			840	.038	▼	1.36	1.66	3.02	4.06
2000	Curb forms, wood, 6" to 12" high, on grade, 1 use			215	.149	SFCA	2.43	6.50	8.93	12.65
2050	2 use			250	.128		1.34	5.55	6.89	10.10
2100	3 use			265	.121		.97	5.25	6.22	9.15
2150	4 use			275	.116		.79	5.05	5.84	8.65
3000	Edge forms, wood, 4 use, on grade, to 6" high			600	.053	L.F.	.31	2.32	2.63	3.92
3050	7" to 12" high			435	.074	SFCA	.77	3.20	3.97	5.80
3060	Over 12"			350	.091	"	.82	3.98	4.80	7.05
3500	For depressed slabs, 4 use, to 12" high		▼	300	.107	L.F.	.67	4.65	5.32	7.90

03 11 Concrete Forming

03 11 13 – Structural Cast-In-Place Concrete Forming

03 11 13.65 Forms In Place, Slab On Grade		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3550	To 24" high	C-1	175	.183	L.F.	.88	7.95		8.83	13.25
4000	For slob blockouts, to 12" high, 1 use		200	.160		.71	6.95		7.66	11.55
4050	To 24" high, 1 use		120	.267		.90	11.60		12.50	18.90
4100	Plastic (extruded), to 6" high, multiple use, on grade		800	.040		8.20	1.74		9.94	11.70
5000	Screed, 24 ga. metal key joint, see Section 03 15 16.30									
5020	Wood, incl. wood stakes, 1" x 3"	C-1	900	.036	L.F.	.77	1.55		2.32	3.23
5050	2" x 4"		900	.036	"	.76	1.55		2.31	3.22
6000	Trench forms in floor, wood, 1 use		160	.200	SFCA	1.68	8.70		10.38	15.30
6050	2 use		175	.183		.92	7.95		8.87	13.30
6100	3 use		180	.178		.67	7.75		8.42	12.70
6150	4 use		185	.173		.55	7.55		8.10	12.20
8760	Void form, corrugated fiberboard, 4" x 12", 4' long	G	3000	.011	S.F.	3.01	.46		3.47	4.03
8770	6" x 12", 4' long	▼	3000	.011	▼	3.59	.46		4.05	4.67
8780	1/4" thick hardboard protective cover for void form	2 Corp	1500	.011	▼	.57	.49		1.06	1.38

03 11 13.85 Forms In Place, Walls

0010	FORMS IN PLACE, WALLS	R031113-10								
0100	Box out for wall openings, to 16" thick, to 10 S.F.	C-2	24	2	Eq.	25	89.50		114.50	166
0150	Over 10 S.F. (use perimeter)	R031113-40	"	280	.171	L.F.	2.13	7.65	9.78	14.15
0250	Brick shelf, 4" w, odd to wall forms, use wall area above shelf									
0260	1 use	R031113-60	C-2	240	.200	SFCA	2.28	8.95	11.23	16.30
0300	2 use		275	.175	▼	1.26	7.80		9.06	13.45
0350	4 use		300	.160	▼	.91	7.15		8.06	12
0500	Bulkhead, wood with keyway, 1 use, 2 piece	▼	265	.181	L.F.	1.90	8.10		10	14.60
0600	Bulkhead forms with keyway, 1 piece expanded metal, 8" wall	G	C-1	1000	.032		1.25	1.39	2.64	3.53
0610	10" wall	G	800	.040		1.36	1.74		3.10	4.19
0620	12" wall	G	525	.061	▼	1.63	2.65		4.28	5.90
0700	Buttress, to 8' high, 1 use	C-2	350	.137	SFCA	4.19	6.10		10.29	14.05
0750	2 use		430	.112	▼	2.31	4.98		7.29	10.25
0800	3 use		460	.104	▼	1.68	4.66		6.34	9.05
0850	4 use		480	.100	▼	1.38	4.47		5.85	8.40
1000	Corbel or haunch, to 12" wide, odd to wall forms, 1 use		150	.320	L.F.	2.28	14.30		16.58	24.50
1050	2 use		170	.282		1.26	12.60		13.86	21
1100	3 use		175	.274		.91	12.25		13.16	19.90
1150	4 use		180	.267		.74	11.90		12.64	19.15
2000	Wall, job-built plywood, to 8' high, 1 use		370	.130	SFCA	2.64	5.80		8.44	11.85
2050	2 use		435	.110		1.67	4.93		6.60	9.45
2100	3 use		495	.097		1.21	4.33		5.54	8.05
2150	4 use		505	.095		.99	4.24		5.23	7.65
2400	8' to 16' high, 1 use		280	.171		2.91	7.65		10.56	15
2450	2 use		345	.139		1.24	6.20		7.44	10.95
2500	3 use		375	.128		.89	5.70		6.59	9.75
2550	4 use		395	.122		.73	5.45		6.18	9.15
2700	Over 16' high, 1 use		235	.204		2.51	9.10		11.61	16.80
2750	2 use		290	.166		1.38	7.40		8.78	12.90
2800	3 use		315	.152		1	6.80		7.80	11.60
2850	4 use		330	.145		.82	6.50		7.32	10.90
4000	Radiol, smooth curved, job-built plywood, 1 use		245	.196		2.41	8.75		11.16	16.15
4050	2 use		300	.160		1.33	7.15		8.48	12.45
4100	3 use		325	.148		.96	6.60		7.56	11.25
4150	4 use		335	.143		.78	6.40		7.18	10.70
4200	Below grade, job-built plywood, 1 use		225	.213		2.48	9.55		12.03	17.40
4210	2 use	▼	225	.213	▼	1.36	9.55		10.91	16.20

03 11 Concrete Forming

03 11 13 – Structural Cast-In-Place Concrete Forming

03 11 13.85 Forms In Place, Walls		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4220	3 use	C-2	225	.213	SFCA	1.13	9.55		10.68	15.95
4230	4 use		225	.213		.81	9.55		10.36	15.60
4300	Curved, 2' chords, job-built plywood, 1 use		290	.166		2	7.40		9.40	13.60
4350	2 use		355	.135		1.10	6.05		7.15	10.50
4400	3 use		385	.125		.80	5.55		6.35	9.50
4450	4 use		400	.120		.65	5.35		6	8.95
4500	Over 8' high, 1 use		290	.166		.88	7.40		8.28	12.35
4525	2 use		355	.135		.48	6.05		6.53	9.85
4550	3 use		385	.125		.35	5.55		5.90	9
4575	4 use		400	.120		.29	5.35		5.64	8.55
4600	Retaining wall, battered, job-built plyw'd, to 8' high, 1 use		300	.160		1.89	7.15		9.04	13.10
4650	2 use		355	.135		1.04	6.05		7.09	10.45
4700	3 use		375	.128		.76	5.70		6.46	9.65
4750	4 use		390	.123		.61	5.50		6.11	9.20
4900	Over 8' to 16' high, 1 use		240	.200		2.06	8.95		11.01	16.05
4950	2 use		295	.163		1.13	7.25		8.38	12.45
5000	3 use		305	.157		.82	7.05		7.87	11.75
5050	4 use		320	.150		.67	6.70		7.37	11.10
5500	For gong woll farming, 192 S.F. sections, deduct					10%	10%			
5550	384 S.F. sections, deduct					20%	20%			
7500	Lintel or sill forms, 1 use	1 Corp	30	.267		3.06	12.25		15.31	22
7520	2 use		34	.235		1.68	10.80		12.48	18.50
7540	3 use		36	.222		1.23	10.20		11.43	17.05
7560	4 use		37	.216		1	9.90		10.90	16.40
7800	Modular prefabricated plywood, based on 20 uses of purchased									
7820	forms, and 4 uses of bracing lumber									
7860	To 8' high	C-2	800	.060	SFCA	.85	2.68		3.53	5.05
8060	Over 8' to 16' high		600	.080		.90	3.57		4.47	6.50
8600	Pilasters, 1 use		270	.178		3.05	7.95		11	15.60
8620	2 use		330	.145		1.68	6.50		8.18	11.85
8640	3 use		370	.130		1.22	5.80		7.02	10.30
8660	4 use		385	.125		.99	5.55		6.54	9.70
9010	Steel framed plywood, based on 50 uses of purchased									
9020	farms, and 4 uses of bracing lumber									
9060	To 8' high	C-2	600	.080	SFCA	.68	3.57		4.25	6.25
9260	Over 8' to 16' high		450	.107		.68	4.76		5.44	8.10
9460	Over 16' to 20' high		400	.120		.68	5.35		6.03	9
9475	For elevated walls, odd						10%			
9480	For battered walls, 1 side battered, odd					10%	10%			
9485	For battered walls, 2 sides battered, odd					15%	15%			

03 11 16 – Architectural Cast-in Place Concrete Forming

03 11 16.13 Concrete Form Liners

0010	CONCRETE FORM LINERS									
5750	Liners for farms (add to wall forms), ABS plastic									
5800	Aged wood, 4" wide, 1 use	1 Corp	256	.031	SFCA	3.30	1.43		4.73	5.85
5820	2 use		256	.031		1.82	1.43		3.25	4.21
5830	3 use		256	.031		1.32	1.43		2.75	3.66
5840	4 use		256	.031		1.07	1.43		2.50	3.39
5900	Fractured rope rib, 1 use		192	.042		4.79	1.91		6.70	8.20
5925	2 use		192	.042		2.63	1.91		4.54	5.85
5950	3 use		192	.042		1.92	1.91		3.83	5.05
6000	4 use		192	.042		1.56	1.91		3.47	4.66

03 11 Concrete Forming

03 11 16 – Architectural Cast-in Place Concrete Forming

03 11 16.13 Concrete Form Liners		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6100	Ribbed, 3/4" deep x 1-1/2" O.C., 1 use	1 Carp	224	.036	SFCA	4.79	1.64		6.43	7.80
6125	2 use		224	.036		2.63	1.64		4.27	5.45
6150	3 use		224	.036		1.92	1.64		3.56	4.64
6200	4 use		224	.036		1.56	1.64		3.20	4.24
6300	Rustic brick pattern, 1 use		224	.036		3.30	1.64		4.94	6.15
6325	2 use		224	.036		1.82	1.64		3.46	4.53
6350	3 use		224	.036		1.32	1.64		2.96	3.98
6400	4 use		224	.036		1.07	1.64		2.71	3.71
6500	3/8" striated, random, 1 use		224	.036		3.30	1.64		4.94	6.15
6525	2 use		224	.036		1.82	1.64		3.46	4.53
6550	3 use		224	.036		1.32	1.64		2.96	3.98
6600	4 use		224	.036		1.07	1.64		2.71	3.71
6850	Random vertical rustication, 1 use		384	.021		6.25	.96		7.21	8.35
6900	2 use		384	.021		3.45	.96		4.41	5.25
6925	3 use		384	.021		2.51	.96		3.47	4.23
6950	4 use		384	.021		2.04	.96		3	3.71
7050	Wood, beveled edge, 3/4" deep, 1 use		384	.021	L.F.	.16	.96		1.12	1.65
7100	1" deep, 1 use		384	.021	"	.33	.96		1.29	1.83
7200	4" wide aged cedar, 1 use		256	.031	SFCA	3.30	1.43		4.73	5.85
7300	4" variable depth rough cedar		224	.036	"	4.79	1.64		6.43	7.80

03 11 19 – Insulating Concrete Forming

03 11 19.10 Insulating Forms, Left In Place

0010	INSULATING FORMS, LEFT IN PLACE									
0020	S.F. is for exterior face, but includes forms for both faces (total R22)									
2000	4" wall, straight block, 16" x 48" (5.33 S.F.)	G	2 Corp	90	.178	Eo.	18.35	8.15	26.50	32.50
2010	90 corner block, exterior 16" x 38" x 22" (6.67 S.F.)	G		75	.213		21.50	9.80	31.30	39
2020	45 corner block, exterior 16" x 34" x 18" (5.78 S.F.)	G		75	.213		21.50	9.80	31.30	39
2100	6" wall, straight block, 16" x 48" (5.33 S.F.)	G		90	.178		18.85	8.15	27	33
2110	90 corner block, exterior 16" x 32" x 24" (6.22 S.F.)	G		75	.213		23.50	9.80	33.30	41
2120	45 corner block, exterior 16" x 26" x 18" (4.89 S.F.)	G		75	.213		21	9.80	30.80	38
2130	Brick ledge block, 16" x 48" (5.33 S.F.)	G		80	.200		24	9.15	33.15	40
2140	Taper top block, 16" x 48" (5.33 S.F.)	G		80	.200		22	9.15	31.15	38.50
2200	8" wall, straight block, 16" x 48" (5.33 S.F.)	G		90	.178		20	8.15	28.15	34.50
2210	90 corner block, exterior 16" x 34" x 26" (6.67 S.F.)	G		75	.213		26	9.80	35.80	43.50
2220	45 corner block, exterior 16" x 28" x 20" (5.33 S.F.)	G		75	.213		22	9.80	31.80	39
2230	Brick ledge block, 16" x 48" (5.33 S.F.)	G		80	.200		25	9.15	34.15	41.50
2240	Taper top block, 16" x 48" (5.33 S.F.)	G		80	.200		23	9.15	32.15	39.50

03 11 19.60 Roof Deck Form Boards

0010	ROOF DECK FORM BOARDS	R051223-50								
0050	Includes bulb tee sub-purlins @ 32-5/8" O.C.									
0070	Non-asbestos fiber cement, 5/16" thick		G-13	2950	.008	S.F.	2.73	.40	.05	3.18
0100	Fiberglass, 1" thick			2700	.009		3.46	.44	.05	3.95
0500	Wood fiber, 1" thick	G		2700	.009		2.26	.44	.05	2.75

03 11 23 – Permanent Stair Forming

03 11 23.75 Forms In Place, Stairs

0010	FORMS IN PLACE, STAIRS	R031113-40								
0015	(Slant length x width), 1 use		C-2	165	.291	S.F.	5.45	13	18.45	26
0050	2 use	R031113-60		170	.282		3.11	12.60	15.71	23
0100	3 use			180	.267		2.32	11.90	14.22	21
0150	4 use			190	.253		1.93	11.30	13.23	19.55
1000	Alternate pricing method (1.0 L.F./S.F.), 1 use			100	.480	LF Rsr	5.45	21.50	26.95	39

03 11 Concrete Forming

03 11 23 – Permanent Stair Forming

03 11 23.75 Forms In Place, Stairs		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1050	2 use	C-2	105	.457	LF Rsr	3.11	20.50		23.61	35
1100	3 use		110	.436		2.32	19.50		21.82	32.50
1150	4 use		115	.417		1.93	18.65		20.58	31
2000	Stairs, cost on sloping ground (length x width), 1 use		220	.218	S.F.	2.14	9.75		11.89	17.40
2025	2 use		232	.207		1.17	9.25		10.42	15.55
2050	3 use		244	.197		.85	8.80		9.65	14.50
2100	4 use		256	.188		.69	8.35		9.04	13.65

03 15 Concrete Accessories

03 15 05 – Concrete Forming Accessories

03 15 05.12 Chamfer Strips

0010	CHAMFER STRIPS									
2000	Polyvinyl chloride, 1/2" wide with leg	1 Corp	535	.015	L.F.	.38	.69		1.07	1.48
2200	3/4" wide with leg		525	.015		.52	.70		1.22	1.65
2400	1" radius with leg		515	.016		.38	.71		1.09	1.52
2800	2" radius with leg		500	.016		.66	.73		1.39	1.86
5000	Wood, 1/2" wide		535	.015		.13	.69		.82	1.20
5200	3/4" wide		525	.015		.16	.70		.86	1.26
5400	1" wide		515	.016		.33	.71		1.04	1.46

03 15 05.15 Column Form Accessories

0010	COLUMN FORM ACCESSORIES									
1000	Column clamps, adjustable to 24" x 24", buy				Set	137			137	150
1100	Rent per month					13.70			13.70	15.05
1300	For sizes to 30" x 30", buy					150			150	165
1400	Rent per month					15			15	16.50
1600	For sizes to 36" x 36", buy					172			172	189
1700	Rent per month					17.20			17.20	18.90
2000	Bar type with wedges, 36" x 36", buy					112			112	123
2100	Rent per month					7.85			7.85	8.60
2300	48" x 48", buy					152			152	167
2400	Rent per month					10.65			10.65	11.70
3000	Scissor type with wedges, 36" x 36", buy					95			95	105
3100	Rent per month					9.50			9.50	10.45
3300	60" x 60", buy					135			135	149
3400	Rent per month					13.50			13.50	14.85
4000	Friction collars 2'-6" diam., buy					2,500			2,500	2,750
4100	Rent per month					175			175	193
4300	4'-0" diam., buy					3,050			3,050	3,350
4400	Rent per month					214			214	235

03 15 05.30 Hangers

0010	HANGERS									
0020	Slob and beam form									
0500	Bonding iron									
0550	3/4" x 22 go., 14 L.F. per lb. or 1/2" x 14 go., 7 L.F. per lb.				Lb.	1.34			1.34	1.47
1000	Fosco ties, coil type, to 24" long				C	405			405	445
1500	Frome ties to 8-1/8"					500			500	550
1550	8-1/8" to 10-1/8"					525			525	575
5000	Snop tie hanger, to 30" overall length, 3000#					405			405	445
5050	To 36" overall length					455			455	500
5100	To 48" overall length					560			560	615

03 15 Concrete Accessories

03 15 05 – Concrete Forming Accessories

			Daily	Labor-			2014 Bare Costs		Total	Total
			Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
03 15 05.30 Hangers										
5500	Steel beam hanger									
5600	Flange to 8-1/8"	G				C	500			550
5650	8-1/8" to 10-1/8"	G				"	525			575
5900	Coil threaded rods, continuous, 1/2" diameter	G				L.F.	1.32			1.45
6000	Tie hangers to 30" overall length, 4000#	G				C	455			505
6100	To 36" overall length	G					510			560
6500	Tie back hanger, up to 12-1/8" flange	G					1,325			1,475
8500	Wire, black annealed, 15 gage	G				Cwt.	147			162
8600	16 go					"	199			219

03 15 05.70 Shores

0010	SHORES									
0020	Erect and strip, by hand, horizontal members									
0500	Aluminum joists and stringers	G	2 Corp	60	.267	Eo.		12.25		18.85
0600	Steel, adjustable beams	G		45	.356			16.30		25
0700	Wood joists			50	.320			14.65		22.50
0800	Wood stringers			30	.533			24.50		37.50
1000	Vertical members to 10' high	G		55	.291			13.35		20.50
1050	To 13' high	G		50	.320			14.65		22.50
1100	To 16' high	G		45	.356			16.30		25
1500	Resharing	G		1400	.011	S.F.	.58	.52		1.45
1600	Flying truss system	G	C-17D	9600	.009	SFCA		.42	.09	.74
1760	Horizontal, aluminum joists, 6-1/4" high x 5' to 21' span, buy	G				L.F.	15.45			17
1770	Beams, 7-1/4" high x 4' to 30' span	G				"	18.10			19.90
1810	Horizontal, steel beam, W8x10, 7' span, buy	G				Eo.	54.50			60
1830	10' span	G					64.50			71
1920	15' span	G					111			122
1940	20' span	G					156			172
1970	Steel stringer, W8x10, 4' to 16' span, buy	G				L.F.	6.45			7.10
3000	Rent for job duration, aluminum joist @ 2' O.C., per mo.	G				SF Flr.	.39			.43
3050	Steel W8x10	G					.16			.18
3060	Steel adjustable	G				▼	.16			.18
3500	#1 post shore, steel, 5'-7" to 9'-6" high, 10000# cap., buy	G				Eo.	148			163
3550	#2 post shore, 7'-3" to 12'-10" high, 7800# capacity	G				▼	171			188
3600	#3 post share, 8'-10" to 16'-1" high, 3800# capacity	G				▼	187			206
5010	Frame sharing systems, steel, 12000#/leg, buy									
5040	Frame, 2' wide x 6' high	G				Eo.	93.50			103
5250	X-brace	G				▼	15.50			17.05
5550	Base plate	G				▼	15.50			17.05
5600	Screw jock	G				▼	33.50			36.50
5650	U-head, 8" x 8"	G				▼	19.10			21

03 15 05.75 Sleeves and Chases

0010	SLEEVES AND CHASES									
0100	Plastic, 1 use, 12" long, 2" diameter		1 Corp	100	.080	Eo.	2.44	3.67		8.35
0150	4" diameter			90	.089	▼	6.65	4.08		13.60
0200	6" diameter			75	.107	▼	14.25	4.89		23.50
0250	12" diameter		▼	60	.133	▼	46.50	6.10		60.50

03 15 05.80 Snap Ties

0010	SNAP TIES, 8-1/4" L&W (Lumber and wedge)									
0100	2250 lb., w/flat washer, 8" wall	G				C	87			95.50
0150	10" wall	G				▼	127			140
0200	12" wall	G				▼	132			145
0250	16" wall	G				▼	146			161

03 15 Concrete Accessories

03 15 05 – Concrete Forming Accessories

03 15 05.80 Snap Ties

			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0300	18" wall	G				C	151			151	166
0500	With plastic cane, 8" wall	G					78			78	86
0550	10" wall	G					81			81	89
0600	12" wall	G					86			86	94.50
0650	16" wall	G					95			95	105
0700	18" wall	G					98			98	108
1000	3350 lb., w/flat washer, 8" wall	G					158			158	174
1150	12" wall	G					178			178	196
1200	16" wall	G					204			204	224
1250	18" wall	G					212			212	233
1500	With plastic cane, 8" wall	G					128			128	141
1600	12" wall	G					145			145	160
1650	16" wall	G					165			165	182
1700	18" wall	G					171			171	188

03 15 05.85 Stair Tread Inserts

0010	STAIR TREAD INSERTS										
0105	Cast nosing insert, abrasive surface, pre-drilled, includes screws										
0110	Aluminum, 3" wide x 3' lang		1 Cefi	32	.250	Ea.	52.50	11		63.50	74
0120	4' lang			31	.258		67	11.35		78.35	90.50
0130	5' lang			30	.267		82.50	11.75		94.25	108
0135	Extruded nosing insert, black abrasive strips, continuous anchor										
0140	Aluminum, 3" wide x 3' lang		1 Cefi	64	.125	Ea.	34	5.50		39.50	45.50
0150	4' lang			60	.133		34	5.85		39.85	46
0160	5' lang			56	.143		52.50	6.30		58.80	67
0165	Extruded nosing insert, black abrasive strips, pre-drilled, incl. screws										
0170	Aluminum, 3" wide x 3' lang		1 Cefi	32	.250	Ea.	46.50	11		57.50	67.50
0180	4' lang			31	.258		60.50	11.35		71.85	83.50
0190	5' lang			30	.267		71	11.75		82.75	95.50

03 15 05.95 Wall and Foundation Form Accessories

0010	WALL AND FOUNDATION FORM ACCESSORIES										
2000	Footings, turnbuckle form aligner	G				Ea.	16.20			16.20	17.85
2050	Spreaders for footer, adjustable	G				"	23			23	25.50
3000	Form oil, up to 1200 S.F. per gallon coverage					Gal.	13.15			13.15	14.45
3050	Up to 800 S.F. per gallon					"	19.85			19.85	22
3500	Form patches, 1-3/4" diameter					C	26			26	28.50
3550	2-3/4" diameter					"	45			45	49.50
4000	Nail stakes, 3/4" diameter, 18" lang	G				Ea.	3.08			3.08	3.39
4050	24" lang	G					3.98			3.98	4.38
4200	30" lang	G					5.10			5.10	5.60
4250	36" lang	G					6.15			6.15	6.80

03 15 13 – Waterstops

03 15 13.50 Waterstops

0010	WATERSTOPS, PVC and Rubber										
0020	PVC, ribbed 3/16" thick, 4" wide		1 Corp	155	.052	L.F.	1.22	2.37		3.59	4.99
0050	6" wide			145	.055		2.16	2.53		4.69	6.30
0500	With center bulb, 6" wide, 3/16" thick			135	.059		1.88	2.72		4.60	6.25
0550	3/8" thick			130	.062		3.35	2.82		6.17	8.05
0600	9" wide x 3/8" thick			125	.064		5.45	2.93		8.38	10.55
0800	Dumbbell type, 6" wide, 3/16" thick			150	.053		1.87	2.45		4.32	5.85
0850	3/8" thick			145	.055		3.64	2.53		6.17	7.90
1000	9" wide, 3/8" thick, plain			130	.062		5.35	2.82		8.17	10.25
1050	Center bulb			130	.062		8.50	2.82		11.32	13.70

03 15 Concrete Accessories

03 15 13 – Waterstops

03 15 13.50 Waterstops		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1250	Ribbed type, split, 3/16" thick, 6" wide	1 Carp	145	.055	L.F.	1.84	2.53		4.37	5.90
1300	3/8" thick		130	.062		4.11	2.82		6.93	8.85
2000	Rubber, flat dumbbell, 3/8" thick, 6" wide		145	.055		10.10	2.53		12.63	15
2050	9" wide		135	.059		15.40	2.72		18.12	21
2500	Flat dumbbell split, 3/8" thick, 6" wide		145	.055		1.84	2.53		4.37	5.90
2550	9" wide		135	.059		4.11	2.72		6.83	8.70
3000	Center bulb, 1/4" thick, 6" wide		145	.055		9.95	2.53		12.48	14.85
3050	9" wide		135	.059		22	2.72		24.72	28
3500	Center bulb split, 3/8" thick, 6" wide		145	.055		14.10	2.53		16.63	19.40
3550	9" wide		135	.059		24.50	2.72		27.22	30.50
5000	Waterstop fittings, rubber, flat									
5010	Dumbbell or center bulb, 3/8" thick,									
5200	Field union, 6" wide	1 Carp	50	.160	Ea.	34	7.35		41.35	49
5250	9" wide		50	.160		45.50	7.35		52.85	61.50
5500	Flat cross, 6" wide		30	.267		42.50	12.25		54.75	66
5550	9" wide		30	.267		61.50	12.25		73.75	86.50
6000	Flat tee, 6" wide		30	.267		41.50	12.25		53.75	64.50
6050	9" wide		30	.267		56	12.25		68.25	81
6500	Flat ell, 6" wide		40	.200		40.50	9.15		49.65	58.50
6550	9" wide		40	.200		52	9.15		61.15	71
7000	Vertical tee, 6" wide		25	.320		30	14.65		44.65	55.50
7050	9" wide		25	.320		42.50	14.65		57.15	69.50
7500	Vertical ell, 6" wide		35	.229		28	10.50		38.50	47
7550	9" wide		35	.229		36	10.50		46.50	55.50

03 15 16 – Concrete Construction Joints

03 15 16.20 Control Joints, Saw Cut

0010	CONTROL JOINTS, SAW CUT									
0100	Sawcut control joints in green concrete									
0120	1" depth	C-27	2000	.008	L.F.	.04	.35	.09	.48	.66
0140	1-1/2" depth		1800	.009		.06	.39	.10	.55	.75
0160	2" depth	▼	1600	.010	▼	.07	.44	.11	.62	.85
0180	Sawcut joint reservoir in cured concrete									
0182	3/8" wide x 3/4" deep, with single saw blade	C-27	1000	.016	L.F.	.06	.70	.18	.94	1.29
0184	1/2" wide x 1" deep, with double saw blades		900	.018		.11	.78	.19	1.08	1.49
0186	3/4" wide x 1-1/2" deep, with double saw blades		800	.020		.22	.88	.22	1.32	1.79
0190	Water blast joint to wash away laitance, 2 passes	C-29	2500	.003			.12	.03	.15	.21
0200	Air blast joint to blow out debris and air dry, 2 passes	C-28	2000	.004			.18	.01	.19	.27
0300	Far backer rod, see Section 07 91 23.10									
0340	Far joint sealant, see Sections 03 15 16.30 or 07 92 13.20									
0900	Far replacement of joint sealant, see Section 07 01 90.81									

03 15 16.30 Expansion Joints

0010	EXPANSION JOINTS									
0020	Keyed, cold, 24 ga., incl. stakes, 3-1/2" high	G	1 Carp	200	.040	L.F.	.77	1.83	2.60	3.68
0050	4-1/2" high	G		200	.040		.88	1.83	2.71	3.80
0100	5-1/2" high	G		195	.041		1.01	1.88	2.89	4.01
0150	7-1/2" high	G		190	.042		1.25	1.93	3.18	4.36
0160	9-1/2" high	G	▼	185	.043		1.36	1.98	3.34	4.56
0300	Paired asphalt, plain, 1/2" x 1"		1 Clab	450	.018		.76	.65	1.41	1.85
0350	1" x 2"			400	.020		3.02	.73	3.75	4.45
0500	Neoprene, liquid, cold applied, 1/2" x 1"			450	.018		2.88	.65	3.53	4.18
0550	1" x 2"			400	.020		11.50	.73	12.23	13.80
0700	Polyurethane, poured, 2 part, 1/2" x 1"			400	.020		1.33	.73	2.06	2.59

03 15 Concrete Accessories

03 15 16 – Concrete Construction Joints

03 15 16.30 Expansion Joints

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0750	1" x 2"	1 Clab	350	.023	L.F.	5.30	.84		6.14	7.15
0900	Rubberized asphalt, hot or cold applied, 1/2" x 1"		450	.018		.40	.65		1.05	1.45
0950	1" x 2"		400	.020		1.60	.73		2.33	2.89
1100	Hot applied, fuel resistant, 1/2" x 1"		450	.018		.60	.65		1.25	1.67
1150	1" x 2"		400	.020		2.40	.73		3.13	3.77
2000	Premalded, bituminous fiber, 1/2" x 6"	1 Corp	375	.021		.43	.98		1.41	1.98
2050	1" x 12"		300	.027		1.95	1.22		3.17	4.04
2140	Concrete expansion joint, recycled paper and fiber, 1/2" x 6"	G	390	.021		.42	.94		1.36	1.91
2150	1/2" x 12"	G	360	.022		.83	1.02		1.85	2.49
2250	Cork with resin binder, 1/2" x 6"		375	.021		.96	.98		1.94	2.57
2300	1" x 12"		300	.027		2.70	1.22		3.92	4.86
2500	Neoprene sponge, closed cell, 1/2" x 6"		375	.021		2.37	.98		3.35	4.12
2550	1" x 12"		300	.027		8.25	1.22		9.47	11
2750	Polyethylene foam, 1/2" x 6"		375	.021		.68	.98		1.66	2.26
2800	1" x 12"		300	.027		2.19	1.22		3.41	4.30
3000	Polyethylene bocker rad, 3/8" diameter		460	.017		.03	.80		.83	1.26
3050	3/4" diameter		460	.017		.06	.80		.86	1.29
3100	1" diameter		460	.017		.09	.80		.89	1.33
3500	Polyurethane foam, with polybutylene, 1/2" x 1/2"		475	.017		1.14	.77		1.91	2.44
3550	1" x 1"		450	.018		2.88	.82		3.70	4.43
3750	Polyurethane foam, regular, closed cell, 1/2" x 6"		375	.021		.84	.98		1.82	2.43
3800	1" x 12"		300	.027		3	1.22		4.22	5.20
4000	Polyvinyl chloride foam, closed cell, 1/2" x 6"		375	.021		2.28	.98		3.26	4.02
4050	1" x 12"		300	.027		7.85	1.22		9.07	10.55
4250	Rubber, gray sponge, 1/2" x 6"		375	.021		1.92	.98		2.90	3.62
4300	1" x 12"		300	.027		6.90	1.22		8.12	9.50
4400	Redwood heartwood, 1" x 4"		400	.020		1.16	.92		2.08	2.70
4450	1" x 6"		375	.021		1.75	.98		2.73	3.44
5000	For installation in walls, add						75%			
5250	For installation in boxouts, add						25%			

03 15 19 – Cast-In Concrete Anchors

03 15 19.05 Anchor Bolt Accessories

0010	ANCHOR BOLT ACCESSORIES									
0015	For anchor bolts set in fresh concrete, see Section 03 15 19.10									
8150	Anchor bolt sleeve, plastic, 1" diam. bolts	1 Corp	60	.133	Ea.	8.10	6.10		14.20	18.35
8500	1-1/2" diameter		28	.286		14.35	13.10		27.45	36
8600	2" diameter		24	.333		18.10	15.30		33.40	43.50
8650	3" diameter		20	.400		33	18.35		51.35	65

03 15 19.10 Anchor Bolts

0010	ANCHOR BOLTS									
0015	Made from recycled materials									
0025	Single bolts installed in fresh concrete, no templates									
0030	Hooked w/nut and washer, 1/2" diameter, 8" long	G	1 Corp	132	.061	Ea.	1.49	2.78	4.27	5.95
0040	12" long	G		131	.061		1.66	2.80	4.46	6.15
0050	5/8" diameter, 8" long	G		129	.062		3.25	2.84	6.09	7.95
0060	12" long	G		127	.063		4	2.89	6.89	8.85
0070	3/4" diameter, 8" long	G		127	.063		4	2.89	6.89	8.85
0080	12" long	G		125	.064		5	2.93	7.93	10.05
0090	2-bolt pattern, including job-built 2-hole template, per set									
0100	J-type, incl. hex nut & washer, 1/2" diameter x 6" long	G	1 Corp	21	.381	Set	5.60	17.45	23.05	33
0110	12" long	G		21	.381		6.30	17.45	23.75	34
0120	18" long	G		21	.381		7.30	17.45	24.75	35

03 15 Concrete Accessories

03 15 19 – Cast-In Concrete Anchors

03 15 19.10 Anchor Bolts				Daily	Labor-			2014 Bare Costs			Total	Total
				Crew	Output	Hours	Unit	Material	Labor	Equipment		Incl O&P
0130	3/4" diameter x 8" long	G	1 Corp	20	.400		Set	10.95	18.35		29.30	40.50
0140	12" long	G		20	.400			12.95	18.35		31.30	43
0150	18" long	G		20	.400			15.95	18.35		34.30	46
0160	1" diameter x 12" long	G		19	.421			22	19.30		41.30	54.50
0170	18" long	G		19	.421			26	19.30		45.30	58.50
0180	24" long	G		19	.421			31	19.30		50.30	64
0190	36" long	G		18	.444			41.50	20.50		62	77
0200	1-1/2" diameter x 18" long	G		17	.471			65.50	21.50		87	106
0210	24" long	G		16	.500			77.50	23		100.50	121
0300	L-type, incl. hex nut & washer, 3/4" diameter x 12" long	G		20	.400			12.20	18.35		30.55	42
0310	18" long	G		20	.400			14.80	18.35		33.15	45
0320	24" long	G		20	.400			17.40	18.35		35.75	47.50
0330	30" long	G		20	.400			21.50	18.35		39.85	52
0340	36" long	G		20	.400			24	18.35		42.35	55
0350	1" diameter x 12" long	G		19	.421			18.90	19.30		38.20	51
0360	18" long	G		19	.421			23	19.30		42.30	55
0370	24" long	G		19	.421			27.50	19.30		46.80	60
0380	30" long	G		19	.421			32	19.30		51.30	65
0390	36" long	G		18	.444			36	20.50		56.50	71
0400	42" long	G		18	.444			43	20.50		63.50	79
0410	48" long	G		18	.444			48	20.50		68.50	84.50
0420	1-1/4" diameter x 18" long	G		18	.444			33	20.50		53.50	68
0430	24" long	G		18	.444			39	20.50		59.50	74
0440	30" long	G		17	.471			44.50	21.50		66	82.50
0450	36" long	G		17	.471			50	21.50		71.50	88.50
0460	42" long	G	2 Corp	32	.500			56.50	23		79.50	97.50
0470	48" long	G		32	.500			64	23		87	106
0480	54" long	G		31	.516			74.50	23.50		98	119
0490	60" long	G		31	.516			82	23.50		105.50	127
0500	1-1/2" diameter x 18" long	G		33	.485			48	22		70	87
0510	24" long	G		32	.500			55.50	23		78.50	96.50
0520	30" long	G		31	.516			62	23.50		85.50	105
0530	36" long	G		30	.533			71	24.50		95.50	116
0540	42" long	G		30	.533			80.50	24.50		105	126
0550	48" long	G		29	.552			90	25.50		115.50	138
0560	54" long	G		28	.571			109	26		135	161
0570	60" long	G		28	.571			119	26		145	172
0580	1-3/4" diameter x 18" long	G		31	.516			67.50	23.50		91	111
0590	24" long	G		30	.533			78.50	24.50		103	124
0600	30" long	G		29	.552			91	25.50		116.50	139
0610	36" long	G		28	.571			103	26		129	155
0620	42" long	G		27	.593			116	27		143	169
0630	48" long	G		26	.615			127	28		155	183
0640	54" long	G		26	.615			156	28		184	216
0650	60" long	G		25	.640			169	29.50		198.50	232
0660	2" diameter x 24" long	G		27	.593			105	27		132	157
0670	30" long	G		27	.593			117	27		144	171
0680	36" long	G		26	.615			129	28		157	186
0690	42" long	G		25	.640			143	29.50		172.50	204
0700	48" long	G		24	.667			164	30.50		194.50	228
0710	54" long	G		23	.696			195	32		227	263
0720	60" long	G		23	.696			209	32		241	279
0730	66" long	G		22	.727			224	33.50		257.50	298

03 15 Concrete Accessories

03 15 19 – Cast-In Concrete Anchors

03 15 19.10 Anchor Bolts

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor Equipment	Total	Total Incl O&P
0740	72" long	G	2 Corp	21	.762	Set	245	35	280	325
1000	4-bolt pattern, including job-built 4-hole template, per set									
1100	J-type, incl. hex nut & washer, 1/2" diameter x 6" long	G	1 Corp	19	.421	Set	8.25	19.30	27.55	39
1110	12" long	G		19	.421		9.60	19.30	28.90	40.50
1120	18" long	G		18	.444		11.60	20.50	32.10	44.50
1130	3/4" diameter x 8" long	G		17	.471		18.95	21.50	40.45	54.50
1140	12" long	G		17	.471		23	21.50	44.50	59
1150	18" long	G		17	.471		29	21.50	50.50	65.50
1160	1" diameter x 12" long	G		16	.500		41	23	64	80.50
1170	18" long	G		15	.533		49	24.50	73.50	91.50
1180	24" long	G		15	.533		59	24.50	83.50	103
1190	36" long	G		15	.533		80	24.50	104.50	126
1200	1-1/2" diameter x 18" long	G		13	.615		128	28	156	185
1210	24" long	G		12	.667		152	30.50	182.50	215
1300	L-type, incl. hex nut & washer, 3/4" diameter x 12" long	G		17	.471		21.50	21.50	43	57
1310	18" long	G		17	.471		26.50	21.50	48	63
1320	24" long	G		17	.471		32	21.50	53.50	68.50
1330	30" long	G		16	.500		39.50	23	62.50	79
1340	36" long	G		16	.500		45	23	68	85
1350	1" diameter x 12" long	G		16	.500		35	23	58	74
1360	18" long	G		15	.533		42.50	24.50	67	84.50
1370	24" long	G		15	.533		52	24.50	76.50	94.50
1380	30" long	G		15	.533		61	24.50	85.50	105
1390	36" long	G		15	.533		69	24.50	93.50	114
1400	42" long	G		14	.571		83.50	26	109.50	132
1410	48" long	G		14	.571		93	26	119	143
1420	1-1/4" diameter x 18" long	G		14	.571		63.50	26	89.50	110
1430	24" long	G		14	.571		74.50	26	100.50	123
1440	30" long	G		13	.615		86	28	114	138
1450	36" long	G		13	.615		97.50	28	125.50	151
1460	42" long	G	2 Corp	25	.640		110	29.50	139.50	167
1470	48" long	G		24	.667		125	30.50	155.50	184
1480	54" long	G		23	.696		146	32	178	210
1490	60" long	G		23	.696		161	32	193	226
1500	1-1/2" diameter x 18" long	G		25	.640		92.50	29.50	122	148
1510	24" long	G		24	.667		108	30.50	138.50	165
1520	30" long	G		23	.696		121	32	153	182
1530	36" long	G		22	.727		139	33.50	172.50	205
1540	42" long	G		22	.727		158	33.50	191.50	226
1550	48" long	G		21	.762		177	35	212	249
1560	54" long	G		20	.800		215	36.50	251.50	294
1570	60" long	G		20	.800		236	36.50	272.50	315
1580	1-3/4" diameter x 18" long	G		22	.727		132	33.50	165.50	197
1590	24" long	G		21	.762		154	35	189	223
1600	30" long	G		21	.762		179	35	214	251
1610	36" long	G		20	.800		204	36.50	240.50	281
1620	42" long	G		19	.842		228	38.50	266.50	310
1630	48" long	G		18	.889		251	41	292	340
1640	54" long	G		18	.889		310	41	351	405
1650	60" long	G		17	.941		335	43	378	435
1660	2" diameter x 24" long	G		19	.842		206	38.50	244.50	287
1670	30" long	G		18	.889		232	41	273	320
1680	36" long	G		18	.889		254	41	295	345

03 15 Concrete Accessories

03 15 19 – Cast-In Concrete Anchors

03 15 19.10 Anchor Bolts			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
1690	42" long		2 Carp	17	.941	Set	283	43		326	375
1700	48" long			16	1		325	46		371	430
1710	54" long			15	1.067		385	49		434	500
1720	60" long			15	1.067		415	49		464	530
1730	66" long			14	1.143		445	52.50		497.50	570
1740	72" long		▼	14	1.143	▼	485	52.50		537.50	615
1990	For galvanized, add					Ea.	75%				

03 15 19.20 Dovetail Anchor System

0010	DOVETAIL ANCHOR SYSTEM										
0500	Dovetail anchor slot, galvanized, foam-filled, 26 ga.		1 Carp	425	.019	L.F.	.84	.86		1.70	2.25
0600	24 ga.			400	.020		1.56	.92		2.48	3.14
0625	22 ga.			400	.020		1.83	.92		2.75	3.43
0900	Stainless steel, foam-filled, 26 ga.		▼	375	.021	▼	1.34	.98		2.32	2.99
1200	Dovetail brick anchor, corrugated, galvanized, 3-1/2" long, 16 ga.		1 Bric	10.50	.762	C	29	34.50		63.50	85
1300	12 ga.			10.50	.762		41	34.50		75.50	98
1500	Seismic, galvanized, 3-1/2" long, 16 ga.			10.50	.762		42	34.50		76.50	99.50
1600	12 ga.			10.50	.762		40	34.50		74.50	97
2000	Dovetail cavity wall, corrugated, galvanized, 5-1/2" long, 16 ga.			10.50	.762		36.50	34.50		71	93
2100	12 ga.			10.50	.762		53	34.50		87.50	112
3000	Dovetail furring anchors, corrugated, galvanized, 1-1/2" long, 16 ga.			10.50	.762		14.70	34.50		49.20	69
3100	12 ga.			10.50	.762		25.50	34.50		60	81
6000	Dovetail stone panel anchors, galvanized, 1/8" x 1" wide, 3-1/2" long			10.50	.762		92	34.50		126.50	154
6100	1/4" x 1" wide		▼	10.50	.762	▼	104	34.50		138.50	168

03 15 19.30 Inserts

0010	INSERTS										
1000	Inserts, slatted nut type for 3/4" bolts, 4" long		1 Carp	84	.095	Ea.	18.70	4.37		23.07	27.50
2100	6" long			84	.095		21	4.37		25.37	30
2150	8" long			84	.095		28	4.37		32.37	38
2200	Slatted, strap type, 4" long			84	.095		20	4.37		24.37	29
2250	6" long			84	.095		23	4.37		27.37	32
2300	8" long			84	.095		30	4.37		34.37	40
2350	Strap for slatted insert, 4" long			84	.095		11	4.37		15.37	18.85
4100	6" long			84	.095		11.95	4.37		16.32	19.90
4150	8" long			84	.095		14.90	4.37		19.27	23
4200	10" long		▼	84	.095	▼	18.15	4.37		22.52	26.50
7000	Loop ferrule type										
7100	1/4" diameter bolt		1 Carp	84	.095	Ea.	2.12	4.37		6.49	9.10
7350	7/8" diameter bolt		"	84	.095	"	9.90	4.37		14.27	17.60
9000	Wedge type										
9100	For 3/4" diameter bolt		1 Carp	60	.133	Ea.	8.80	6.10		14.90	19.10
9800	Cut washers, black										
9900	3/4" bolt					Ea.	1.11			1.11	1.22
9950	For galvanized inserts, add						30%				

03 15 19.45 Machinery Anchors

0010	MACHINERY ANCHORS , heavy duty, incl. sleeve, floating base nut,										
0020	lower stud & coupling nut, fiber plug, connecting stud, washer & nut.										
0030	For flush mounted embedment in poured concrete heavy equip. pads.										
0200	Stud & bolt, 1/2" diameter		E-16	40	.400	Ea.	72.50	21	3.55	97.05	121
0300	5/8" diameter		▼	35	.457		80.50	24	4.06	108.56	135
0500	3/4" diameter			30	.533		93	28	4.74	125.74	156
0600	7/8" diameter			25	.640		101	33.50	5.70	140.20	176
0800	1" diameter		▼	20	.800	▼	117	41.50	7.10	165.60	210

03 15 Concrete Accessories

03 15 19 – Cast-In Concrete Anchors

03 15 19.45 Machinery Anchors

			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0900	1-1/4" diameter	G	E-16	15	1.067	Eo.	141	55.50	9.45	205.95	263

03 21 Reinforcement Bars

03 21 05 – Reinforcing Steel Accessories

03 21 05.10 Rebar Accessories

0010 REBAR ACCESSORIES

0030	Steel & plastic made from recycled materials										
0100	Beam bolsters (BB), lower, 1-1/2" high, plain steel	G				C.L.F.	28			28	31
0102	Galvanized	G					33.50			33.50	37
0104	Stainless tipped legs	G					455			455	500
0106	Plastic tipped legs	G					40			40	44
0108	Epoxy dipped	G					70			70	77
0110	2" high, plain	G					34			34	37.50
0120	Galvanized	G					41			41	45
0140	Stainless tipped legs	G					450			450	495
0160	Plastic tipped legs	G					47			47	51.50
0162	Epoxy dipped	G					79			79	87
0200	Upper (BBU), 1-1/2" high, plain steel	G					67			67	73.50
0210	3" high	G					76			76	83.50
0500	Slob balsters, continuous (SB), 1" high, plain steel	G					28			28	31
0502	Galvanized	G					33.50			33.50	37
0504	Stainless tipped legs	G					455			455	500
0506	Plastic tipped legs	G					40			40	44
0510	2" high, plain steel	G					34			34	37.50
0515	Galvanized	G					41			41	45
0520	Stainless tipped legs	G					460			460	505
0525	Plastic tipped legs	G					47			47	51.50
0530	For bolsters with wire runners (SBR), add	G					37			37	40.50
0540	For bolsters with plates (SBP), add	G					88			88	97
0700	Bog ties, 16 ga., plain, 4" long	G				C	4			4	4.40
0710	5" long	G					5			5	5.50
0720	6" long	G					4			4	4.40
0730	7" long	G					5			5	5.50
1200	High chairs, individual (HC), 3" high, plain steel	G					56			56	61.50
1202	Galvanized	G					67			67	74
1204	Stainless tipped legs	G					480			480	530
1206	Plastic tipped legs	G					61			61	67
1210	5" high, plain	G					82			82	90
1212	Galvanized	G					98.50			98.50	108
1214	Stainless tipped legs	G					505			505	560
1216	Plastic tipped legs	G					90			90	99
1220	8" high, plain	G					121			121	133
1222	Galvanized	G					145			145	160
1224	Stainless tipped legs	G					545			545	600
1226	Plastic tipped legs	G					133			133	146
1230	12" high, plain	G					287			287	315
1232	Galvanized	G					345			345	380
1234	Stainless tipped legs	G					710			710	785
1236	Plastic tipped legs	G					315			315	345
1400	Individual high chairs, with plate (HCP), 5" high	G					171			171	188
1410	8" high	G					237			237	261

03 21 Reinforcement Bars

03 21 05 – Reinforcing Steel Accessories

03 21 05.10 Rebar Accessories

			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1500	Bor choir (BC), 1-1/2" high, plain steel	G				C	36			36	39.50
1520	Golvanized	G					41			41	45
1530	Stainless tipped legs	G					460			460	505
1540	Plastic tipped legs	G					39			39	43
1700	Continuous high choirs (CHC), legs 8" O.C., 4" high, plain steel	G				C.L.F.	49			49	54
1705	Golvanized	G					58.50			58.50	64.50
1710	Stainless tipped legs	G					475			475	520
1715	Plastic tipped legs	G					66			66	72.50
1718	Epoxy dipped	G					85			85	93.50
1720	6" high, plain	G					67			67	73.50
1725	Golvanized	G					80.50			80.50	88.50
1730	Stainless tipped legs	G					490			490	540
1735	Plastic tipped legs	G					90			90	99
1738	Epoxy dipped	G					116			116	128
1740	8" high, plain	G					75			75	82.50
1745	Golvanized	G					90			90	99
1750	Stainless tipped legs	G					500			500	550
1755	Plastic tipped legs	G					114			114	125
1758	Epoxy dipped	G					147			147	162
1900	For continuous bottom wire runners, odd	G					50			50	55
1940	For continuous bottom plate, odd	G					205			205	226
2200	Screed chair base, 1/2" coil thread diam., 2-1/2" high, plain steel	G				C	310			310	340
2210	Golvanized	G					370			370	405
2220	5-1/2" high, plain	G					370			370	410
2250	Golvanized	G					445			445	490
2300	3/4" coil thread diam., 2-1/2" high, plain steel	G					385			385	425
2310	Golvanized	G					465			465	510
2320	5-1/2" high, plain steel	G					475			475	525
2350	Golvanized	G					570			570	630
2400	Screed holder, 1/2" coil thread diam. for pipe screed, plain steel, 6" long	G					370			370	410
2420	12" long	G					570			570	630
2500	3/4" coil thread diam. for pipe screed, plain steel, 6" long	G					535			535	585
2520	12" long	G					855			855	940
2700	Screw anchor for bolts, plain steel, 3/4" diameter x 4" long	G					505			505	555
2720	1" diameter x 6" long	G					830			830	915
2740	1-1/2" diameter x 8" long	G					1,050			1,050	1,150
2800	Screw anchor eye bolts, 3/4" x 3" long	G					2,700			2,700	2,975
2820	1" x 3-1/2" long	G					3,625			3,625	3,975
2840	1-1/2" x 6" long	G					11,100			11,100	12,200
2900	Screw anchor bolts, 3/4" x 9" long	G					1,525			1,525	1,675
2920	1" x 12" long	G					2,925			2,925	3,200
3001	Slob lifting inserts, single pickup, golv, 3/4" diam., 5" high	G					1,475			1,475	1,625
3010	6" high	G					1,500			1,500	1,650
3030	7" high	G					1,525			1,525	1,675
3100	1" diameter, 5-1/2" high	G					1,550			1,550	1,700
3120	7" high	G					1,600			1,600	1,750
3200	Double pickup lifting inserts, 1" diameter, 5-1/2" high	G					3,000			3,000	3,300
3220	7" high	G					3,325			3,325	3,650
3330	1-1/2" diameter, 8" high	G					4,175			4,175	4,600
3800	Subgrade choirs, #4 bar head, 3-1/2" high	G					35			35	38.50
3850	12" high	G					41			41	45
3900	#6 bar head, 3-1/2" high	G					35			35	38.50
3950	12" high	G					41			41	45

03 21 Reinforcement Bars

03 21 05 – Reinforcing Steel Accessories

03 21 05.10 Rebar Accessories

			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
4200	Subgrade stakes, no nail holes, 3/4" diameter, 12" long	G				C	275			275	305
4250	24" long	G					335			335	370
4300	7/8" diameter, 12" long	G					350			350	385
4350	24" long	G				↓	585			585	645
4500	Tie wire, 16 ga. annealed steel	G				Cwt.	199			199	219

03 21 05.75 Splicing Reinforcing Bars

0010	SPlicing REINFORCING BARS										
0020	Including holding bors in ploc while splicing										
0100	Stondord, self-oligning type, toper threaded, #4 bors	G	C-25	190	.168	Eq.	6.15	6.70		12.85	17.65
0105	#5 bors	G		170	.188		7.50	7.50		15	20.50
0110	#6 bors	G		150	.213		8.65	8.50		17.15	23.50
0120	#7 bors	G		130	.246		10.10	9.80		19.90	27
0300	#8 bors	G	↓	115	.278		17.10	11.10		28.20	37
0305	#9 bors	G	C-5	105	.533		18.70	26.50	7.10	52.30	70
0310	#10 bors	G		95	.589		21	29.50	7.85	58.35	77
0320	#11 bors	G		85	.659		22	33	8.80	63.80	85
0330	#14 bors	G		65	.862		33	43	11.50	87.50	116
0340	#18 bors	G		45	1.244		50.50	62	16.60	129.10	170
0500	Tronsition self-oligning, toper threaded, #18-14	G		45	1.244		52.50	62	16.60	131.10	172
0510	#18-11	G		45	1.244		53.50	62	16.60	132.10	173
0520	#14-11	G		65	.862		35	43	11.50	89.50	118
0540	#11-10	G		85	.659		24	33	8.80	65.80	87
0550	#10-9	G	↓	95	.589		23	29.50	7.85	60.35	79
0560	#9-8	G	C-25	105	.305		21	12.15		33.15	42.50
0580	#8-7	G		115	.278		19.20	11.10		30.30	39
0590	#7-6	G		130	.246		12.10	9.80		21.90	29
0600	Position coupler for curved bors, toper threaded, #4 bors	G		160	.200		28	8		36	44
0610	#5 bors	G		145	.221		29.50	8.80		38.30	46.50
0620	#6 bors	G		130	.246		35.50	9.80		45.30	55
0630	#7 bors	G		110	.291		37.50	11.60		49.10	60.50
0640	#8 bors	G		100	.320		39	12.75		51.75	63.50
0650	#9 bors	G	C-5	90	.622		42.50	31	8.30	81.80	105
0660	#10 bors	G		80	.700		46	35	9.30	90.30	115
0670	#11 bors	G		70	.800		48	40	10.65	98.65	126
0680	#14 bors	G		55	1.018		60	51	13.55	124.55	160
0690	#18 bors	G		40	1.400		86	70	18.65	174.65	224
0700	Tronsition position coupler for curved bors, toper threaded, #18-14	G		40	1.400		88	70	18.65	176.65	227
0710	#18-11	G		40	1.400		89	70	18.65	177.65	228
0720	#14-11	G		55	1.018		62	51	13.55	126.55	162
0730	#11-10	G		70	.800		50	40	10.65	100.65	129
0740	#10-9	G	↓	80	.700		48	35	9.30	92.30	118
0750	#9-8	G	C-25	90	.356		45	14.20		59.20	72.50
0760	#8-7	G		100	.320		41	12.75		53.75	65.50
0770	#7-6	G		110	.291		40	11.60		51.60	63
0800	Sleeve type w/grout filler, far precast concrete, #6 bors	G		72	.444		22	17.75		39.75	53
0802	#7 bors	G		64	.500		26.50	19.95		46.45	61.50
0805	#8 bors	G		56	.571		31.50	23		54.50	72
0807	#9 bors	G	↓	48	.667		37.50	26.50		64	84.50
0810	#10 bors	G	C-5	40	1.400		44.50	70	18.65	133.15	179
0900	#11 bors	G		32	1.750		49	87.50	23.50	160	216
0920	#14 bors	G	↓	24	2.333		76.50	116	31	223.50	299
1000	Sleeve type w/ferrous filler, far criticol structures, #6 bors	G	C-25	72	.444	↓	60.50	17.75		78.25	95.50

03 21 Reinforcement Bars

03 21 05 – Reinforcing Steel Accessories

03 21 05.75 Splicing Reinforcing Bars				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
1210	#7 bars	G	C-25	64	.500	Ea.		61.50	19.95		81.45	100
1220	#8 bars	G	▼	56	.571			64.50	23		87.50	108
1230	#9 bars	G	C-5	48	1.167			66.50	58	15.55	140.05	181
1240	#10 bars	G		40	1.400			71	70	18.65	159.65	208
1250	#11 bars	G		32	1.750			85.50	87.50	23.50	196.50	256
1260	#14 bars	G		24	2.333			107	116	31	254	335
1270	#18 bars	G	▼	16	3.500			109	175	46.50	330.50	445
2000	Weldable half coupler, taper threaded, #4 bars	G	E-16	120	.133			9.15	6.95	1.18	17.28	23.50
2100	#5 bars	G		112	.143			10.80	7.45	1.27	19.52	26.50
2200	#6 bars	G		104	.154			17.10	8	1.37	26.47	34.50
2300	#7 bars	G		96	.167			19.90	8.70	1.48	30.08	39
2400	#8 bars	G		88	.182			21	9.45	1.61	32.06	41.50
2500	#9 bars	G		80	.200			23	10.40	1.78	35.18	45.50
2600	#10 bars	G		72	.222			23.50	11.60	1.97	37.07	48
2700	#11 bars	G		64	.250			25	13.05	2.22	40.27	53
2800	#14 bars	G		56	.286			29	14.90	2.54	46.44	61.50
2900	#18 bars	G	▼	48	.333	▼		47	17.35	2.96	67.31	85.50

03 21 11 – Plain Steel Reinforcement Bars

03 21 11.60 Reinforcing In Place

0010	REINFORCING IN PLACE, 50-60 ton lots, A615 Grade 60	R032110-10										
0020	Includes labor, but not material cost, to install accessories											
0030	Made from recycled materials											
0100	Beams & Girders, #3 to #7	G	4 Radm	1.60	20	Tan		1,000	1,025		2,025	2,700
0150	#8 to #18	G		2.70	11.852			1,000	600		1,600	2,050
0200	Columns, #3 to #7	G		1.50	21.333			1,000	1,075		2,075	2,800
0250	#8 to #18	G		2.30	13.913			1,000	705		1,705	2,200
0300	Spiroils, hot rolled, 8" to 15" diameter	G		2.20	14.545			1,575	735		2,310	2,875
0320	15" to 24" diameter	G		2.20	14.545			1,500	735		2,235	2,800
0330	24" to 36" diameter	G		2.30	13.913			1,425	705		2,130	2,675
0340	36" to 48" diameter	G		2.40	13.333			1,350	675		2,025	2,550
0360	48" to 64" diameter	G		2.50	12.800			1,500	650		2,150	2,675
0380	64" to 84" diameter	G		2.60	12.308			1,575	625		2,200	2,700
0390	84" to 96" diameter	G		2.70	11.852			1,650	600		2,250	2,775
0400	Elevated slabs, #4 to #7	G		2.90	11.034			1,000	560		1,560	1,975
0500	Footings, #4 to #7	G		2.10	15.238			1,000	770		1,770	2,300
0550	#8 to #18	G		3.60	8.889			1,000	450		1,450	1,800
0600	Slab on grade, #3 to #7	G		2.30	13.913			1,000	705		1,705	2,200
0700	Walls, #3 to #7	G		3	10.667			1,000	540		1,540	1,950
0750	#8 to #18	G		4	8			1,000	405		1,405	1,725
0900	For other than 50 – 60 ton lots											
1000	Under 10 ton job, #3 to #7, add							25%	10%			
1010	#8 to #18, add							20%	10%			
1050	10 – 50 ton job, #3 to #7, add							10%				
1060	#8 to #18, add							5%				
1100	60 – 100 ton job, #3 to #7, deduct							5%				
1110	#8 to #18, deduct							10%				
1150	Over 100 ton job, #3 to #7, deduct							10%				
1160	#8 to #18, deduct							15%				
1200	Reinforcing in place, A615 Grade 75, add	G				Tan		92.50			92.50	102
1220	Grade 90, add							125			125	138
2000	Unloading & sorting, add to above		C-5	100	.560				28	7.45	35.45	51.50
2200	Crane cost for handling, 90 picks/day, up to 1.5 Tons/bundle, add to above			135	.415				20.50	5.55	26.05	38

03 21 Reinforcement Bars

03 21 11 – Plain Steel Reinforcement Bars

03 21 11.60 Reinforcing In Place

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2210	1.0 Ton/bundle	C-5	92	.609	Ton		30.50	8.10	38.60	56
2220	0.5 Ton/bundle		35	1.600			80	21.50	101.50	148
2400	Dowels, 2 feet long, deformed, #3	G 2 Rodm	520	.031	Eq.	.41	1.56		1.97	2.90
2410	#4	G	480	.033		.73	1.69		2.42	3.46
2420	#5	G	435	.037		1.15	1.86		3.01	4.19
2430	#6	G	360	.044		1.65	2.25		3.90	5.35
2450	Larger and heavier dowels, odd	G	725	.022	Lb.	.55	1.12		1.67	2.37
2500	Smooth dowels, 12" long, 1/4" or 3/8" diameter	G	140	.114	Eq.	.72	5.80		6.52	9.90
2520	5/8" diameter	G	125	.128		1.26	6.50		7.76	11.60
2530	3/4" diameter	G	110	.145		1.57	7.35		8.92	13.25
2600	Dowel sleeves for CIP concrete, 2-port system									
2610	Sleeve base, plastic, for 5/8" smooth dowel sleeve, fasten to edge form	1 Rodm	200	.040	Eq.	.52	2.03		2.55	3.75
2615	Sleeve, plastic, 12" long, for 5/8" smooth dowel, snap onto base		400	.020		1.16	1.01		2.17	2.87
2620	Sleeve base, for 3/4" smooth dowel sleeve		175	.046		.52	2.32		2.84	4.21
2625	Sleeve, 12" long, for 3/4" smooth dowel		350	.023		1.30	1.16		2.46	3.25
2630	Sleeve base, for 1" smooth dowel sleeve		150	.053		.66	2.70		3.36	4.97
2635	Sleeve, 12" long, for 1" smooth dowel		300	.027		1.37	1.35		2.72	3.63
2700	Dowel caps, visual warning only, plastic, #3 to #8	2 Rodm	800	.020		.27	1.01		1.28	1.89
2720	#8 to #18		750	.021		.68	1.08		1.76	2.45
2750	Impolement protective, plastic, #4 to #9		800	.020		1.50	1.01		2.51	3.24

03 21 13 – Galvanized Reinforcement Steel Bars

03 21 13.10 Galvanized Reinforcing

0010	GALVANIZED REINFORCING									
0150	Add to plain steel rebar pricing for galvanized rebar				Ton	460			460	505

03 21 16 – Epoxy-Coated Reinforcement Steel Bars

03 21 16.10 Epoxy-Coated Reinforcing

0010	EPOXY-COATED REINFORCING									
0100	Add to plain steel rebar pricing for epoxy-coated rebar				Ton	410			410	450

03 21 21 – Composite Reinforcement Bars

03 21 21.11 Glass Fiber-Reinforced Polymer Reinforcement Bars

0010	GLASS FIBER-REINFORCED POLYMER REINFORCEMENT BARS									
0020	Includes labor, but not material cost, to install accessories									
0050	#2 bar, .043 lb./L.F.	4 Rodm	9500	.003	L.F.	.36	.17		.53	.67
0100	#3 bar, .092 lb./L.F.		9300	.003		.49	.17		.66	.81
0150	#4 bar, .160 lb./L.F.		9100	.004		.71	.18		.89	1.06
0200	#5 bar, .258 lb./L.F.		8700	.004		1.09	.19		1.28	1.49
0250	#6 bar, .372 lb./L.F.		8300	.004		1.41	.20		1.61	1.86
0300	#7 bar, .497 lb./L.F.		7900	.004		1.84	.21		2.05	2.34
0350	#8 bar, .620 lb./L.F.		7400	.004		2.50	.22		2.72	3.09
0400	#9 bar, .800 lb./L.F.		6800	.005		3.16	.24		3.40	3.85
0450	#10 bar, 1.08 lb./L.F.		5800	.006		3.93	.28		4.21	4.76
0500	For Bends, odd per bend				Eq.	1.48			1.48	1.63

03 22 Fabric and Grid Reinforcing

03 22 11 – Plain Welded Wire Fabric Reinforcing

03 22 11.10 Plain Welded Wire Fabric				Daily Crew Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0010	PLAIN WELDED WIRE FABRIC ASTM A185										
	R032205-30										
0020	Includes labor, but not material cost, to install accessories										
0030	Made from recycled materials										
0050	Sheets										
0100	6 x 6 - W1.4 x W1.4 (10 x 10) 21 lb. per C.S.F.		2 Radm	35	.457	C.S.F.	14.50	23		37.50	52.50
0200	6 x 6 - W2.1 x W2.1 (8 x 8) 30 lb. per C.S.F.			31	.516		17.20	26		43.20	60
0300	6 x 6 - W2.9 x W2.9 (6 x 6) 42 lb. per C.S.F.			29	.552		22.50	28		50.50	68.50
0400	6 x 6 - W4 x W4 (4 x 4) 58 lb. per C.S.F.			27	.593		31.50	30		61.50	81.50
0500	4 x 4 - W1.4 x W1.4 (10 x 10) 31 lb. per C.S.F.			31	.516		20	26		46	63
0600	4 x 4 - W2.1 x W2.1 (8 x 8) 44 lb. per C.S.F.			29	.552		25	28		53	71.50
0650	4 x 4 - W2.9 x W2.9 (6 x 6) 61 lb. per C.S.F.			27	.593		40.50	30		70.50	91.50
0700	4 x 4 - W4 x W4 (4 x 4) 85 lb. per C.S.F.			25	.640		50.50	32.50		83	107
0750	Rolls										
0800	2 x 2 - #14 galv., 21 lb./C.S.F., beam & column wrap		2 Radm	6.50	2.462	C.S.F.	41.50	125		166.50	242
0900	2 x 2 - #12 galv. for gunite reinforcing		"	6.50	2.462	"	62.50	125		187.50	265

03 22 13 – Galvanized Welded Wire Fabric Reinforcing

03 22 13.10 Galvanized Welded Wire Fabric

0010	GALVANIZED WELDED WIRE FABRIC										
0100	Add to plain welded wire pricing for galvanized welded wire					Lb.	.23			.23	.25

03 22 16 – Epoxy-Coated Welded Wire Fabric Reinforcing

03 22 16.10 Epoxy-Coated Welded Wire Fabric

0010	EPOXY-COATED WELDED WIRE FABRIC										
0100	Add to plain welded wire pricing for epoxy-coated welded wire					Lb.	.21			.21	.23

03 23 Stressed Tendon Reinforcing

03 23 05 – Prestressing Tendons

03 23 05.50 Prestressing Steel

0010	PRESTRESSING STEEL										
	R034136-90										
0100	Grouted strand, in beams, post-tensioned in field, 50' span, 100 kip		C-3	1200	.053	Lb.	2.62	2.50	.09	5.21	6.90
0150	300 kip			2700	.024		1.12	1.11	.04	2.27	3.01
0300	100' span, 100 kip			1700	.038		2.62	1.77	.07	4.46	5.70
0350	300 kip			3200	.020		2.25	.94	.04	3.23	3.98
0500	200' span, 100 kip			2700	.024		2.62	1.11	.04	3.77	4.66
0550	300 kip			3500	.018		2.25	.86	.03	3.14	3.85
0800	Grouted bars, in beams, 50' span, 42 kip			2600	.025		1.06	1.16	.04	2.26	3.02
0850	143 kip			3200	.020		1.02	.94	.04	2	2.62
1000	75' span, 42 kip			3200	.020		1.08	.94	.04	2.06	2.68
1050	143 kip			4200	.015		.90	.72	.03	1.65	2.14
1200	Ungrouted strand, in beams, 50' span, 100 kip		C-4	1275	.025		.61	1.28	.02	1.91	2.72
1250	300 kip			1475	.022		.61	1.11	.02	1.74	2.43
1400	100' span, 100 kip			1500	.021		.61	1.09	.02	1.72	2.40
1450	300 kip			1650	.019		.61	.99	.02	1.62	2.25
1600	200' span, 100 kip			1500	.021		.61	1.09	.02	1.72	2.40
1650	300 kip			1700	.019		.61	.96	.02	1.59	2.20
1800	Ungrouted bars, in beams, 50' span, 42 kip			1400	.023		.50	1.17	.02	1.69	2.41
1850	143 kip			1700	.019		.50	.96	.02	1.48	2.08
2000	75' span, 42 kip			1800	.018		.50	.91	.02	1.43	2
2050	143 kip			2200	.015		.50	.74	.01	1.25	1.74
2220	Ungrouted single strand, 100' elevated slab, 25 kip			1200	.027		.61	1.36	.03	2	2.84
2250	35 kip			1475	.022		.61	1.11	.02	1.74	2.43

03 23 Stressed Tendon Reinforcing

03 23 05 – Prestressing Tendons

03 23 05.50 Prestressing Steel		Crew	Daily Output	Labor Hours	Unit	Material	2014 Bore Costs		Total	Total Incl O&P
							Labor	Equipment		
3000	Slabs on grade, 0.5-inch diam. non-banded strands, HDPE sheathed,									
3050	attached dead-end anchors, loose stressing-end anchors									
3100	25' x 30' slab, strands @ 36" O.C., placing	2 Radm	2940	.005	S.F.	.60	.28		.88	1.09
3105	Stressing	C-4A	3750	.004			.22	.01	.23	.35
3110	42" O.C., placing	2 Radm	3200	.005		.53	.25		.78	.99
3115	Stressing	C-4A	4040	.004			.20	.01	.21	.33
3120	48" O.C., placing	2 Radm	3510	.005		.47	.23		.70	.87
3125	Stressing	C-4A	4390	.004			.18	.01	.19	.30
3150	25' x 40' slab, strands @ 36" O.C., placing	2 Radm	3370	.005		.58	.24		.82	1.02
3155	Stressing	C-4A	4360	.004			.19	.01	.20	.30
3160	42" O.C., placing	2 Radm	3760	.004		.50	.22		.72	.89
3165	Stressing	C-4A	4820	.003			.17	.01	.18	.27
3170	48" O.C., placing	2 Radm	4090	.004		.45	.20		.65	.80
3175	Stressing	C-4A	5190	.003			.16	.01	.17	.26
3200	30' x 30' slab, strands @ 36" O.C., placing	2 Radm	3260	.005		.58	.25		.83	1.03
3205	Stressing	C-4A	4190	.004			.19	.01	.20	.31
3210	42" O.C., placing	2 Radm	3530	.005		.52	.23		.75	.94
3215	Stressing	C-4A	4500	.004			.18	.01	.19	.29
3220	48" O.C., placing	2 Radm	3840	.004		.47	.21		.68	.84
3225	Stressing	C-4A	4850	.003			.17	.01	.18	.27
3230	30' x 40' slab, strands @ 36" O.C., placing	2 Radm	3780	.004		.56	.21		.77	.96
3235	Stressing	C-4A	4920	.003			.16	.01	.17	.27
3240	42" O.C., placing	2 Radm	4190	.004		.49	.19		.68	.84
3245	Stressing	C-4A	5410	.003			.15	.01	.16	.25
3250	48" O.C., placing	2 Radm	4520	.004		.45	.18		.63	.77
3255	Stressing	C-4A	5790	.003			.14	.01	.15	.23
3260	30' x 50' slab, strands @ 36" O.C., placing	2 Radm	4300	.004		.53	.19		.72	.89
3265	Stressing	C-4A	5650	.003			.14	.01	.15	.24
3270	42" O.C., placing	2 Radm	4720	.003		.47	.17		.64	.79
3275	Stressing	C-4A	6150	.003			.13	.01	.14	.22
3280	48" O.C., placing	2 Radm	5240	.003		.42	.15		.57	.70
3285	Stressing	C-4A	6760	.002			.12	.01	.13	.20

03 24 Fibrous Reinforcing

03 24 05 – Reinforcing Fibers

03 24 05.30 Synthetic Fibers

0010	SYNTHETIC FIBERS									
0100	Synthetic fibers, odd to concrete				Lb.	4.80			4.80	5.30
0110	1-1/2 lb. per C.Y.				C.Y.	7.40			7.40	8.15

03 24 05.70 Steel Fibers

0010	STEEL FIBERS									
0140	ASTM A850, Type V, continuously deformed, 1-1/2" long x 0.045" diam.									
0150	Add to price of ready mix concrete				Lb.	1.25			1.25	1.38
0205	Alternate pricing, dosing of 5 lb. per C.Y., odd to price of RMC				C.Y.	6.25			6.25	6.90
0210	10 lb. per C.Y.					12.50			12.50	13.75
0215	15 lb. per C.Y.					18.75			18.75	20.50
0220	20 lb. per C.Y.					25			25	27.50
0225	25 lb. per C.Y.					31.50			31.50	34.50
0230	30 lb. per C.Y.					37.50			37.50	41.50
0235	35 lb. per C.Y.					44			44	48
0240	40 lb. per C.Y.					50			50	55

03 24 Fibrous Reinforcing

03 24 05 – Reinforcing Fibers

03 24 05.70 Steel Fibers				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0250	50 lb. per C.Y.						C.Y.	62.50			62.50	69
0275	75 lb. per C.Y.							94			94	103
0300	100 lb. per C.Y.							125			125	138

03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

03 30 53.40 Concrete In Place

0010	CONCRETE IN PLACE	R033105-10										
0020	Including forms (4 uses), Grade 60 rebar, concrete (Portland cement	R033105-20										
0050	Type I), placement and finishing unless otherwise indicated	R033105-50										
0300	Beams (3500 psi), 5 kip per L.F., 10' span	R033105-65	G-14A	15.62	12.804	C.Y.		315	590	47.50	952.50	1,325
0350	25' span	R033105-70	"	18.55	10.782			335	495	40	870	1,175
0500	Chimney foundations (5000 psi), over 5 C.Y.	R033105-85	G-14C	32.22	3.476			147	153	1.01	301.01	400
0510	(3500 psi), under 5 C.Y.		"	23.71	4.724			173	207	1.37	381.37	515
0700	Columns, square (4000 psi), 12" x 12", less than 2% reinforcing		G-14A	11.96	16.722			355	770	62	1,187	1,675
0720	2% to 3% reinforcing reinforcing			10.13	19.743			565	910	73.50	1,548.50	2,100
0740	Over 3% reinforcing			9.03	22.148			850	1,025	82.50	1,957.50	2,600
0800	16" x 16", less than 2% reinforcing			16.22	12.330			282	565	46	893	1,225
0820	2% to 3% reinforcing reinforcing			12.57	15.911			480	730	59	1,269	1,725
0840	Over 3% reinforcing			10.25	19.512			745	900	72.50	1,717.50	2,275
0900	24" x 24", less than 2% reinforcing			23.66	8.453			238	390	31.50	659.50	895
0920	2% to 3% reinforcing reinforcing			17.71	11.293			425	520	42	987	1,325
0940	Over 3% reinforcing			14.15	14.134			680	650	52.50	1,382.50	1,800
1000	36" x 36", less than 2% reinforcing			33.69	5.936			210	273	22	505	675
1020	2% to 3% reinforcing reinforcing			23.32	8.576			375	395	32	802	1,050
1040	Over 3% reinforcing			17.82	11.223			635	515	42	1,192	1,550
1100	Columns, round (4000 psi), tied, 12" diameter, less than 2% reinforcing			20.97	9.537			305	440	35.50	780.50	1,050
1120	2% to 3% reinforcing reinforcing			15.27	13.098			515	605	48.50	1,168.50	1,550
1140	Over 3% reinforcing			12.11	16.515			785	760	61.50	1,606.50	2,100
1200	16" diameter, less than 2% reinforcing			31.49	6.351			280	292	23.50	595.50	785
1220	2% to 3% reinforcing reinforcing			19.12	10.460			490	480	39	1,009	1,325
1240	Over 3% reinforcing			13.77	14.524			740	670	54	1,464	1,900
1300	20" diameter, less than 2% reinforcing			41.04	4.873			283	224	18.15	525.15	675
1320	2% to 3% reinforcing reinforcing			24.05	8.316			475	385	31	891	1,150
1340	Over 3% reinforcing			17.01	11.758			740	540	43.50	1,323.50	1,700
1400	24" diameter, less than 2% reinforcing			51.85	3.857			264	177	14.35	455.35	580
1420	2% to 3% reinforcing reinforcing			27.06	7.391			475	340	27.50	842.50	1,075
1440	Over 3% reinforcing			18.29	10.935			725	505	40.50	1,270.50	1,625
1500	36" diameter, less than 2% reinforcing			75.04	2.665			265	123	9.90	397.90	490
1520	2% to 3% reinforcing reinforcing			37.49	5.335			450	245	19.85	714.85	895
1540	Over 3% reinforcing			22.84	8.757			705	405	32.50	1,142.50	1,425
1900	Elevated slab (4000 psi), flat slab with drops, 125 psf Sup. Load, 20' span		G-14B	38.45	5.410			256	249	19.30	524.30	690
1950	30' span			50.99	4.079			273	187	14.55	474.55	605
2100	Flat plate, 125 psf Sup. Load, 15' span			30.24	6.878			234	315	24.50	573.50	770
2150	25' span			49.60	4.194			245	193	14.95	452.95	585
2300	Waffle const., 30" domes, 125 psf Sup. Load, 20' span			37.07	5.611			254	258	20	532	695
2350	30' span			44.07	4.720			237	217	16.85	470.85	615
2500	One way joists, 30" pans, 125 psf Sup. Load, 15' span			27.38	7.597			299	350	27	676	900
2550	25' span			31.15	6.677			283	305	24	612	810
2700	One way beam & slab, 125 psf Sup. Load, 15' span			20.59	10.102			253	465	36	754	1,025
2750	25' span			28.36	7.334			241	335	26	602	815

03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

03 30 53.40 Concrete In Place		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2900	Two way beam & slab, 125 psf Sup. Load, 15' span	C-14B	24.04	8.652	C.Y.	245	395	31	671	920
2950	25' span	▼	35.87	5.799	▼	212	266	20.50	498.50	665
3100	Elevated slabs, flat plate, including finish, not									
3110	including forms or reinforcing									
3150	Regular concrete (4000 psi), 4" slab	C-8	2613	.021	S.F.	1.39	.87	.27	2.53	3.16
3200	6" slab		2585	.022		2.03	.88	.27	3.18	3.87
3250	2-1/2" thick floor fill		2685	.021		.91	.85	.26	2.02	2.58
3300	Lightweight, 110# per C.F., 2-1/2" thick floor fill		2585	.022		1.24	.88	.27	2.39	3
3400	Cellular concrete, 1-5/8" fill, under 5000 S.F.		2000	.028		.84	1.14	.36	2.34	3.05
3450	Over 10,000 S.F.		2200	.025		.80	1.04	.32	2.16	2.83
3500	Add per floor for 3 to 6 stories high		31800	.002			.07	.02	.09	.13
3520	For 7 to 20 stories high	▼	21200	.003	▼		.11	.03	.14	.20
3540	Equipment pad (3000 psi), 3' x 3' x 6" thick	C-14H	45	1.067	Ea.	44.50	48	.74	93.24	124
3550	4' x 4' x 6" thick		30	1.600		66.50	72	1.10	139.60	185
3560	5' x 5' x 8" thick		18	2.667		119	120	1.84	240.84	320
3570	6' x 6' x 8" thick		14	3.429		160	155	2.37	317.37	415
3580	8' x 8' x 10" thick		8	6		335	271	4.14	610.14	790
3590	10' x 10' x 12" thick	▼	5	9.600	▼	575	435	6.60	1,016.60	1,300
3800	Faotings (3000 psi), spread under 1 C.Y.	C-14C	28	4	C.Y.	164	176	1.16	341.16	455
3825	1 C.Y. to 5 C.Y.		43	2.605		198	114	.76	312.76	395
3850	Over 5 C.Y.		75	1.493		180	65.50	.43	245.93	299
3900	Faotings, strip (3000 psi), 18" x 9", unreinforced	C-14L	40	2.400		120	103	.82	223.82	291
3920	18" x 9", reinforced	C-14C	35	3.200		144	141	.93	285.93	375
3925	20" x 10", unreinforced	C-14L	45	2.133		117	91.50	.73	209.23	269
3930	20" x 10", reinforced	C-14C	40	2.800		136	123	.81	259.81	340
3935	24" x 12", unreinforced	C-14L	55	1.745		116	74.50	.59	191.09	243
3940	24" x 12", reinforced	C-14C	48	2.333		136	102	.68	238.68	310
3945	36" x 12", unreinforced	C-14L	70	1.371		112	58.50	.47	170.97	214
3950	36" x 12", reinforced	C-14C	60	1.867		130	82	.54	212.54	271
4000	Foundation mat (3000 psi), under 10 C.Y.		38.67	2.896		204	127	.84	331.84	420
4050	Over 20 C.Y.		56.40	1.986		178	87	.58	265.58	330
4200	Wall, free-standing (3000 psi), 8" thick, 8' high	C-14D	45.83	4.364		152	199	16.25	367.25	490
4250	14' high		27.26	7.337		188	335	27.50	550.50	750
4260	12" thick, 8' high		64.32	3.109		142	142	11.55	295.55	390
4270	14' high		40.01	4.999		152	228	18.60	398.60	540
4300	15" thick, 8' high		80.02	2.499		137	114	9.30	260.30	335
4350	12' high		51.26	3.902		137	178	14.50	329.50	440
4500	18' high		48.85	4.094		155	187	15.25	357.25	475
4520	Handicap access ramp (4000 psi), railing both sides, 3' wide	C-14H	14.58	3.292	L.F.	315	149	2.27	466.27	580
4525	5' wide		12.22	3.928		330	177	2.71	509.71	635
4530	With 6" curb and rails both sides, 3' wide		8.55	5.614		325	253	3.87	581.87	755
4535	5' wide	▼	7.31	6.566	▼	330	296	4.53	630.53	825
4650	Slab on grade (3500 psi), not including finish, 4" thick	C-14E	60.75	1.449	C.Y.	120	65.50	.55	186.05	234
4700	6" thick	"	92	.957	"	115	43	.36	158.36	194
4701	Thickened slab edge (3500 psi), for slab on grade poured									
4702	monolithically with slab; depth is in addition to slab thickness;									
4703	formed vertical outside edge, earthen bottom and inside slope									
4705	8" deep x 8" wide bottom, unreinforced	C-14L	2190	.044	L.F.	3.33	1.88	.01	5.22	6.55
4710	8" x 8", reinforced	C-14C	1670	.067		5.70	2.95	.02	8.67	10.80
4715	12" deep x 12" wide bottom, unreinforced	C-14L	1800	.053		6.75	2.28	.02	9.05	11
4720	12" x 12", reinforced	C-14C	1310	.086		11.05	3.76	.02	14.83	18
4725	16" deep x 16" wide bottom, unreinforced	C-14L	1440	.067		11.40	2.85	.02	14.27	16.95
4730	16" x 16", reinforced	C-14C	1120	.100		16.50	4.39	.03	20.92	25

03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

03 30 53.40 Concrete In Place		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4735	20" deep x 20" wide bottom, unreinforced	C-14L	1150	.083	L.F.	17.25	3.57	.03	20.85	24.50
4740	20" x 20", reinforced	C-14C	920	.122		24	5.35	.04	29.39	34.50
4745	24" deep x 24" wide bottom, unreinforced	C-14L	930	.103		24.50	4.42	.04	28.96	34
4750	24" x 24", reinforced	C-14C	740	.151	▼	33	6.65	.04	39.69	46.50
4751	Slob on grade (3500 psi), incl. troweled finish, not incl. forms									
4760	or reinforcing, over 10,000 S.F., 4" thick	C-14F	3425	.021	S.F.	1.31	.88	.01	2.20	2.77
4820	6" thick		3350	.021		1.91	.90	.01	2.82	3.46
4840	8" thick		3184	.023		2.62	.95	.01	3.58	4.31
4900	12" thick		2734	.026		3.92	1.10	.01	5.03	6
4950	15" thick		2505	.029	▼	4.93	1.20	.01	6.14	7.20
5000	Slob on grade (3000 psi), incl. broom finish, not incl. forms									
5001	or reinforcing, 4" thick	C-14G	2873	.019	S.F.	1.29	.80	.01	2.10	2.63
5010	6" thick		2590	.022		2.01	.89	.01	2.91	3.56
5020	8" thick	▼	2320	.024	▼	2.62	.99	.01	3.62	4.40
5200	Lift slob in place above the foundation, incl. forms, reinforcing,									
5210	concrete (4000 psi) and columns, over 20,000 S.F. per floor	C-14B	2113	.098	S.F.	6.80	4.52	.35	11.67	14.85
5250	10,000 S.F. to 20,000 S.F. per floor		1650	.126		7.45	5.80	.45	13.70	17.65
5300	Under 10,000 S.F. per floor		1500	.139	▼	8.10	6.35	.50	14.95	19.30
5500	Lightweight, ready mix, including screed finish only,									
5510	not including forms or reinforcing									
5550	1:4 (2500 psi) for structural roof decks	C-14B	260	.800	C.Y.	138	37	2.86	177.86	212
5600	1:6 (3000 psi) for ground slob with radiant heat	C-14F	92	.783		140	32.50	.36	172.86	203
5650	1:3:2 (2000 psi) with sand aggregate, roof deck	C-14B	260	.800		135	37	2.86	174.86	209
5700	Ground slob (2000 psi)	C-14F	107	.673		135	28	.31	163.31	191
5900	Pile caps (3000 psi), incl. forms and reinf., sq. or rect., under 10 C.Y.	C-14C	54.14	2.069		165	91	.60	256.60	325
5950	Over 10 C.Y.		75	1.493		155	65.50	.43	220.93	271
6000	Triangular or hexagonal, under 10 C.Y.		53	2.113		121	93	.61	214.61	277
6050	Over 10 C.Y.	▼	85	1.318		137	58	.38	195.38	240
6200	Retaining walls (3000 psi), gravity, 4' high see Section 32 32	C-14D	66.20	3.021		137	138	11.25	286.25	375
6250	10' high		125	1.600		131	73	5.95	209.95	264
6300	Cantilever, level backfill loading, 8' high		70	2.857		147	130	10.65	287.65	375
6350	16' high	▼	91	2.198	▼	142	100	8.20	250.20	320
6800	Stairs (3500 psi), not including safety treads, free standing, 3'-6" wide	C-14H	83	.578	LF Nose	5.40	26	.40	31.80	46.50
6850	Cast on ground		125	.384	"	4.49	17.35	.27	22.11	31.50
7000	Stair landings, free standing		200	.240	S.F.	4.39	10.85	.17	15.41	21.50
7050	Cast on ground	▼	475	.101	"	3.45	4.56	.07	8.08	10.85

03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

03 31 13.25 Concrete, Hand Mix

0010	CONCRETE, HAND MIX for small quantities or remote areas									
0050	Includes bulk local aggregate, bulk sand, bagged Portland									
0060	cement (Type I) and water, using gas powered cement mixer									
0125	2500 psi	C-30	135	.059	C.F.	3.14	2.17	1.31	6.62	8.25
0130	3000 psi		135	.059		3.37	2.17	1.31	6.85	8.50
0135	3500 psi		135	.059		3.50	2.17	1.31	6.98	8.65
0140	4000 psi		135	.059		3.66	2.17	1.31	7.14	8.80
0145	4500 psi		135	.059		3.83	2.17	1.31	7.31	9
0150	5000 psi	▼	135	.059	▼	4.09	2.17	1.31	7.57	9.30
0300	Using pre-bagged dry mix and wheelbarrow (80-lb. bag = 0.6 C.F.)									
0340	4000 psi	1 Clob	48	.167	C.F.	6.25	6.10		12.35	16.35

03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

03 31 13.30 Concrete, Volumetric Site-Mixed				Daily Crew Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0010	CONCRETE, VOLUMETRIC SITE-MIXED										
0015	Mixed on-site in volumetric truck										
0020	Includes local aggregate, sand, Portland cement (Type I) and water										
0025	Excludes all additives and treatments										
0100	3000 psi, 1 C.Y. mixed and discharged					C.Y.	159			159	175
0110	2 C.Y.						136			136	150
0120	3 C.Y.						122			122	134
0130	4 C.Y.						114			114	125
0140	5 C.Y.						106			106	116
0200	For truck holding/waiting time past first 2 on-site hours, add					Hr.	72			72	79
0210	For trip charge beyond first 20 miles, each way, add					Mile	2.25			2.25	2.48
0220	For each additional increase of 500 psi, odd					Ea.	4.17			4.17	4.59

03 31 13.35 Heavyweight Concrete, Ready Mix

0010	HEAVYWEIGHT CONCRETE, READY MIX, delivered			R033105-10							
0012	Includes local aggregate, sand, Portland cement (Type I) and water										
0015	Excludes all additives and treatments			R033105-20							
0020	2000 psi					C.Y.	93			93	102
0100	2500 psi			R033105-30			95.50			95.50	105
0150	3000 psi						99			99	109
0200	3500 psi			R033105-40			101			101	111
0300	4000 psi						104			104	114
0350	4500 psi			R033105-50			107			107	117
0400	5000 psi						110			110	121
0411	6000 psi						113			113	124
0412	8000 psi						119			119	130
0413	10,000 psi						125			125	137
0414	12,000 psi						131			131	144
1000	For high early strength (Portland cement Type III), add						10%				
1010	For structural lightweight with regular sand, add						25%				
1300	For winter concrete (hot water), add						4.50			4.50	4.95
1400	For hot weather concrete (ice), add						7.65			7.65	8.40
1410	For mid-range water reducer, add						3.69			3.69	4.06
1420	For high-range water reducer/superplasticizer, add						5.70			5.70	6.30
1430	For retarder, add						3.06			3.06	3.37
1440	For non-Chloride accelerator, add						5.65			5.65	6.20
1450	For Chloride accelerator, per 1%, add						3.32			3.32	3.65
1460	For fiber reinforcing, synthetic (1 lb./C.Y.), add						6.95			6.95	7.60
1500	For Saturday delivery, add						4.93			4.93	5.40
1510	For truck holding/waiting time past 1st hour per load, add					Hr.	97			97	107
1520	For short load (less than 4 C.Y.), add per load					Ea.	77.50			77.50	85
2000	For all lightweight aggregate, odd					C.Y.	45%				

03 31 13.70 Placing Concrete

0010	PLACING CONCRETE			R033105-70								
0020	Includes labor and equipment to place, level (strike off) and consolidate											
0050	Beams, elevated, small beams, pumped			C-20	60	1.067	C.Y.		42	12.95	54.95	78.50
0100	With crane and bucket			C-7	45	1.600			63.50	27.50	91	128
0200	Large beams, pumped			C-20	90	.711			28	8.65	36.65	52.50
0250	With crane and bucket			C-7	65	1.108			44	18.85	62.85	88.50
0400	Calumns, square or round, 12" thick, pumped			C-20	60	1.067			42	12.95	54.95	78.50
0450	With crane and bucket			C-7	40	1.800			71.50	30.50	102	144
0600	18" thick, pumped			C-20	90	.711			28	8.65	36.65	52.50
0650	With crane and bucket			C-7	55	1.309			52	22.50	74.50	104

03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

03 31 13.70 Placing Concrete		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0800	24" thick, pumped	C-20	92	.696	C.Y.		27.50	8.45	35.95	51.50
0850	With crane and bucket	C-7	70	1.029			41	17.50	58.50	82
1000	36" thick, pumped	C-20	140	.457			18	5.55	23.55	33.50
1050	With crane and bucket	C-7	100	.720			28.50	12.25	40.75	57.50
1400	Elevated slabs, less than 6" thick, pumped	C-20	140	.457			18	5.55	23.55	33.50
1450	With crane and bucket	C-7	95	.758			30	12.90	42.90	60
1500	6" to 10" thick, pumped	C-20	160	.400			15.75	4.85	20.60	29.50
1550	With crane and bucket	C-7	110	.655			26	11.15	37.15	52.50
1600	Slabs over 10" thick, pumped	C-20	180	.356			14	4.31	18.31	26
1650	With crane and bucket	C-7	130	.554			22	9.45	31.45	44
1900	Footings, continuous, shallow, direct chute	C-6	120	.400			15.30	.55	15.85	24
1950	Pumped	C-20	150	.427			16.80	5.20	22	31
2000	With crane and bucket	C-7	90	.800			32	13.60	45.60	63.50
2100	Footings, continuous, deep, direct chute	C-6	140	.343			13.10	.47	13.57	20.50
2150	Pumped	C-20	160	.400			15.75	4.85	20.60	29.50
2200	With crane and bucket	C-7	110	.655			26	11.15	37.15	52.50
2400	Footings, spread, under 1 C.Y., direct chute	C-6	55	.873			33.50	1.20	34.70	52.50
2450	Pumped	C-20	65	.985			39	11.95	50.95	72.50
2500	With crane and bucket	C-7	45	1.600			63.50	27.50	91	128
2600	Over 5 C.Y., direct chute	C-6	120	.400			15.30	.55	15.85	24
2650	Pumped	C-20	150	.427			16.80	5.20	22	31
2700	With crane and bucket	C-7	100	.720			28.50	12.25	40.75	57.50
2900	Foundation mats, over 20 C.Y., direct chute	C-6	350	.137			5.25	.19	5.44	8.20
2950	Pumped	C-20	400	.160			6.30	1.94	8.24	11.80
3000	With crane and bucket	C-7	300	.240			9.55	4.09	13.64	19.10
3200	Grade beams, direct chute	C-6	150	.320			12.25	.44	12.69	19.20
3250	Pumped	C-20	180	.356			14	4.31	18.31	26
3300	With crane and bucket	C-7	120	.600			24	10.20	34.20	48
3500	High rise, far more than 5 stories, pumped, add per story	C-20	2100	.030			1.20	.37	1.57	2.25
3510	With crane and bucket, add per story	C-7	2100	.034			1.37	.58	1.95	2.73
3700	Pile caps, under 5 C.Y., direct chute	C-6	90	.533			20.50	.74	21.24	32
3750	Pumped	C-20	110	.582			23	7.05	30.05	43
3800	With crane and bucket	C-7	80	.900			36	15.35	51.35	72
3850	Pile cap, 5 C.Y. to 10 C.Y., direct chute	C-6	175	.274			10.50	.38	10.88	16.45
3900	Pumped	C-20	200	.320			12.60	3.88	16.48	23.50
3950	With crane and bucket	C-7	150	.480			19.10	8.15	27.25	38
4000	Over 10 C.Y., direct chute	C-6	215	.223			8.55	.31	8.86	13.40
4050	Pumped	C-20	240	.267			10.50	3.23	13.73	19.60
4100	With crane and bucket	C-7	185	.389			15.50	6.65	22.15	31
4300	Slab on grade, up to 6" thick, direct chute	C-6	110	.436			16.70	.60	17.30	26
4350	Pumped	C-20	130	.492			19.40	5.95	25.35	36
4400	With crane and bucket	C-7	110	.655			26	11.15	37.15	52.50
4600	Over 6" thick, direct chute	C-6	165	.291			11.10	.40	11.50	17.45
4650	Pumped	C-20	185	.346			13.60	4.20	17.80	25.50
4700	With crane and bucket	C-7	145	.497			19.75	8.45	28.20	39.50
4900	Walls, 8" thick, direct chute	C-6	90	.533			20.50	.74	21.24	32
4950	Pumped	C-20	100	.640			25	7.75	32.75	47
5000	With crane and bucket	C-7	80	.900			36	15.35	51.35	72
5050	12" thick, direct chute	C-6	100	.480			18.35	.66	19.01	28.50
5100	Pumped	C-20	110	.582			23	7.05	30.05	43
5200	With crane and bucket	C-7	90	.800			32	13.60	45.60	63.50
5300	15" thick, direct chute	C-6	105	.457			17.45	.63	18.08	27
5350	Pumped	C-20	120	.533			21	6.45	27.45	39

03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

03 31 13.70 Placing Concrete		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5400	With crane and bucket	C-7	95	.758	C.Y.		30	12.90	42.90	60
5600	Wheeled concrete dumping, add to placing costs above									
5610	Working cart, 50' haul, add	C-18	32	.281	C.Y.		10.35	1.88	12.23	18.05
5620	150' haul, add		24	.375			13.85	2.51	16.36	24.50
5700	250' haul, add		18	.500			18.45	3.35	21.80	32
5800	Riding cart, 50' haul, add	C-19	80	.113			4.15	1.26	5.41	7.80
5810	150' haul, add		60	.150			5.55	1.69	7.24	10.40
5900	250' haul, add		45	.200			7.35	2.25	9.60	13.85
6000	Concrete in-fill for pan-type metal stairs and landings. Manual placement includes up to 50' horizontal haul from point of concrete discharge.									
6100	Stair pan treads, 2" deep									
6110	Flights in 1st floor level up/down from discharge point	C-8A	3200	.015	S.F.		.59		.59	.90
6120	2nd floor level		2500	.019			.76		.76	1.15
6130	3rd floor level		2000	.024			.95		.95	1.44
6140	4th floor level		1800	.027			1.05		1.05	1.60
6200	Intermediate stair landings, pan-type 4" deep									
6210	Flights in 1st floor level up/down from discharge point	C-8A	2000	.024	S.F.		.95		.95	1.44
6220	2nd floor level		1500	.032			1.26		1.26	1.92
6230	3rd floor level		1200	.040			1.58		1.58	2.40
6240	4th floor level		1000	.048			1.89		1.89	2.88

03 35 Concrete Finishing

03 35 13 – High-Tolerance Concrete Floor Finishing

03 35 13.30 Finishing Floors, High Tolerance

0010	FINISHING FLOORS, HIGH TOLERANCE									
0012	Finishing requires that concrete first be placed, struck off & consolidated									
0015	Basic finishing for various unspecified flatwork									
0100	Bull float only	C-10	4000	.006	S.F.		.25		.25	.37
0125	Bull float & manual float		2000	.012			.50		.50	.75
0150	Bull float, manual float, & broom finish, w/edging & joints		1850	.013			.54		.54	.81
0200	Bull float, manual float & manual steel trowel		1265	.019			.79		.79	1.18
0210	For specified Random Access Floors in ACI Classes 1, 2, 3 and 4 to achieve									
0215	Composite Overall Floor Flatness and Levelness values up to FF35/FL25									
0250	Bull float, machine float & machine trowel (walk-behind)	C-10C	1715	.014	S.F.		.58	.03	.61	.90
0300	Power screed, bull float, machine float & trowel (walk-behind)	C-10D	2400	.010			.42	.05	.47	.67
0350	Power screed, bull float, machine float & trowel (ride-on)	C-10E	4000	.006			.25	.07	.32	.44
0352	For specified Random Access Floors in ACI Classes 5, 6, 7 and 8 to achieve									
0354	Composite Overall Floor Flatness and Levelness values up to FF50/FL50									
0356	Add for two-dimensional reststraightening after power float	C-10	6000	.004	S.F.		.17		.17	.25
0358	For specified Random or Defined Access Floors in ACI Class 9 to achieve									
0360	Composite Overall Floor Flatness and Levelness values up to FF100/FL100									
0362	Add for two-dimensional reststraightening after bull float & power float	C-10	3000	.008	S.F.		.33		.33	.50
0364	For specified Superflat Defined Access Floors in ACI Class 9 to achieve									
0366	Minimum Floor Flatness and Levelness values of FF100/FL100									
0368	Add for 2-dim'l reststraightening after bull float, power float, power trowel	C-10	2000	.012	S.F.		.50		.50	.75

03 35 16 – Heavy-Duty Concrete Floor Finishing

03 35 16.30 Finishing Floors, Heavy-Duty

0010	FINISHING FLOORS, HEAVY-DUTY									
1800	Floor abrasives, .25 psf, aluminum oxide	1 Cefi	850	.009	S.F.	.51	.41		.92	1.17
1850	Silican carbide		850	.009		.77	.41		1.18	1.46

03 35 Concrete Finishing

03 35 16 – Heavy-Duty Concrete Floor Finishing

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
03 35 16.30 Finishing Floors, Heavy-Duty							Labor	Equipment		
2000	Floor hardeners, metallic, light service, .50 psf, add	1 Cefi	850	.009	S.F.	.51	.41		.92	1.17
2050	Medium service, .75 psf		750	.011		.77	.47		1.24	1.53
2100	Heavy service, 1.0 psf		650	.012		1.02	.54		1.56	1.92
2150	Extra heavy, 1.5 psf		575	.014		1.53	.61		2.14	2.59
2300	Non-metallic, light service, .50 psf		850	.009		.20	.41		.61	.83
2350	Medium service, .75 psf		750	.011		.31	.47		.78	1.03
2400	Heavy service, 1.00 psf		650	.012		.41	.54		.95	1.25
2450	Extro heavy, 1.50 psf		575	.014		.61	.61		1.22	1.58
2800	Trap rock wearing surface for monolithic floors									
2810	2.0 psf	C-10B	1250	.032	S.F.	.02	1.27	.23	1.52	2.19
3800	Dustpraafing, solvent-based, 1 coat	1 Cefi	1900	.004		.18	.19		.37	.46
3850	2 coats		1300	.006		.63	.27		.90	1.10
4000	Epoxy-based, 1 coat		1500	.005		.14	.23		.37	.50
4050	2 coats		1500	.005		.28	.23		.51	.66

03 35 19 – Colored Concrete Finishing

03 35 19.30 Finishing Floors, Colored										
0010	FINISHING FLOORS, COLORED									
3000	Floor coloring, dusted on (0.6 psf), add to above	1 Cefi	1300	.006	S.F.	.44	.27		.71	.88
3050	(1.0 psf), add to above	"	625	.013	"	.73	.56		1.29	1.64
3100	Colored powder only				Lb.	.73			.73	.81
3600	1/2" topping using 0.6 psf powdered color	C-10B	590	.068	S.F.	4.81	2.69	.48	7.98	9.90
3650	1/2" topping using 1.0 psf powdered color	"	590	.068	"	5.10	2.69	.48	8.27	10.20

03 35 23 – Exposed Aggregate Concrete Finishing

03 35 23.30 Finishing Floors, Exposed Aggregate										
0010	FINISHING FLOORS, EXPOSED AGGREGATE									
1600	Exposed lacol aggregate finish, 3 lb. per S.F.	1 Cefi	625	.013	S.F.	.43	.56		.99	1.30
1650	4 lb. per S.F.	"	465	.017	"	.81	.76		1.57	2.01

03 35 29 – Tooled Concrete Finishing

03 35 29.30 Finishing Floors, Tooled										
0010	FINISHING FLOORS, TOOLED									
4400	Stoir finish, flat	1 Cefi	275	.029	S.F.		1.28		1.28	1.89
4500	Steel trawel finish		200	.040			1.76		1.76	2.60
4600	Silicon carbide finish, .25 psf		150	.053		.51	2.35		2.86	4.03

03 35 29.60 Finishing Walls

0010	FINISHING WALLS									
0020	Break ties and patch voids	1 Cefi	540	.015	S.F.	.04	.65		.69	1
0050	Burlop rub with grout		450	.018		.04	.78		.82	1.20
0100	Corborundum rub, dry		270	.030			1.31		1.31	1.93
0150	Wet rub	▼	175	.046			2.01		2.01	2.98
0300	Bush hammer, green concrete	B-39	1000	.048			1.86	.23	2.09	3.12
0350	Cured concrete	"	650	.074			2.86	.36	3.22	4.80
0500	Acid etch	1 Cefi	575	.014		.14	.61		.75	1.06
0600	Flaat finish, 1/16" thick	"	300	.027		.36	1.17		1.53	2.13
0700	Sondblost, light penetration	E-11	1100	.029		.50	1.20	.22	1.92	2.78
0750	Heavy penetrotion	"	375	.085		1	3.51	.63	5.14	7.65
0850	Grind form fins flush	1 Clab	700	.011	L.F.		.42		.42	.65

03 35 Concrete Finishing

03 35 33 – Stamped Concrete Finishing

03 35 33.50 Slab Texture Stamping		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SLAB TEXTURE STAMPING									
0050	Stamping requires that concrete first be placed, struck off, consolidated,									
0060	bull floated and free of bleed water. Decorative stamping tasks include:									
0100	Step 1 - first application of dry shake colored hardener	1 Cefi	6400	.001	S.F.	.43	.06		.49	.55
0110	Step 2 - bull float		6400	.001			.06		.06	.08
0130	Step 3 - second application of dry shake colored hardener	▼	6400	.001		.21	.06		.27	.31
0140	Step 4 - bull float, manual float & steel trowel	3 Cefi	1280	.019			.83		.83	1.22
0150	Step 5 - application of dry shake colored release agent	1 Cefi	6400	.001		.10	.06		.16	.19
0160	Step 6 - place, tamp & remove mats	3 Cefi	2400	.010		1.43	.44		1.87	2.23
0170	Step 7 - touch up edges, mat joints & simulated grout lines	1 Cefi	1280	.006			.28		.28	.41
0300	Alternate stamping estimating method includes all tasks above	4 Cefi	800	.040		2.17	1.76		3.93	4.98
0400	Step 8 - pressure wash @ 3000 psi after 24 hours	1 Cefi	1600	.005			.22		.22	.33
0500	Step 9 - roll 2 coats cure/seal compound when dry	"	800	.010	▼	.59	.44		1.03	1.30

03 35 43 – Polished Concrete Finishing

03 35 43.10 Polished Concrete Floors

0010	POLISHED CONCRETE FLOORS	R033543-10								
0015	Processing of cured concrete to include grinding, honing,									
0020	and polishing of interior floors with 22" segmented diamond									
0025	planetary floor grinder (2 passes in different directions per grit)									
0100	Removal of pre-existing coatings, dry, with carbide discs using									
0105	dry vacuum pick-up system, final hand sweeping									
0110	Glue, adhesive or tar	J-4	1.60	15	M.S.F.	24	625	124	773	1,100
0120	Paint, epoxy, 1 coat		3.60	6.667		24	277	55	356	500
0130	2 coats		1.80	13.333		24	555	110	689	975
0200	Grinding and edging, wet, including wet vac pick-up and auto									
0205	scrubbing between grit changes									
0210	40-grit diamond/metal matrix	J-4A	1.60	20	M.S.F.	31.50	805	256	1,092.50	1,550
0220	80-grit diamond/metal matrix		2	16		31.50	645	205	881.50	1,225
0230	120-grit diamond/metal matrix		2.40	13.333		31.50	540	171	742.50	1,025
0240	200-grit diamond/metal matrix	▼	2.80	11.429		31.50	460	146	637.50	890
0300	Spray on dye or stain (1 coat)	1 Cefi	16	.500		212	22		234	266
0400	Spray on densifier/hardener (2 coats)	"	8	1		340	44		384	440
0410	Auto scrubbing after 2nd coat, when dry	J-4B	16	.500			18.35	13.25	31.60	43
0500	Honing and edging, wet, including wet vac pick-up and auto									
0505	scrubbing between grit changes									
0510	100-grit diamond/resin matrix	J-4A	2.80	11.429	M.S.F.	31.50	460	146	637.50	890
0520	200-grit diamond/resin matrix	"	2.80	11.429	"	31.50	460	146	637.50	890
0530	Dry, including dry vacuum pick-up system, final hand sweeping									
0540	400-grit diamond/resin matrix	J-4A	2.80	11.429	M.S.F.	31.50	460	146	637.50	890
0600	Polishing and edging, dry, including dry vac pick-up and hand									
0605	sweeping between grit changes									
0610	800-grit diamond/resin matrix	J-4A	2.80	11.429	M.S.F.	31.50	460	146	637.50	890
0620	1500-grit diamond/resin matrix		2.80	11.429		31.50	460	146	637.50	890
0630	3000-grit diamond/resin matrix	▼	2.80	11.429		31.50	460	146	637.50	890
0700	Auto scrubbing after final polishing step	J-4B	16	.500	▼		18.35	13.25	31.60	43

03 37 Specialty Placed Concrete

03 37 13 – Shotcrete

03 37 13.30 Gunit (Dry-Mix)		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010	GUNIT (DRY-MIX)						Labor	Equipment		
0020	Typical in place, 1" layers, no mesh included	C-16	2000	.028	S.F.	.32	1.14	.20	1.66	2.30
0100	Mesh for gunit 2 x 2, #12	2 Radm	800	.020		.63	1.01		1.64	2.28
0150	#4 reinforcing bors @ 6" each way	"	500	.032		1.67	1.62		3.29	4.39
0300	Typical in place, including mesh, 2" thick, flat surfaces	C-16	1000	.056		1.26	2.28	.39	3.93	5.30
0350	Curved surfaces		500	.112		1.26	4.57	.79	6.62	9.20
0500	4" thick, flat surfaces		750	.075		1.90	3.05	.52	5.47	7.30
0550	Curved surfaces	▼	350	.160		1.90	6.55	1.12	9.57	13.20
0900	Prepore old walls, no scaffolding, good condition	C-10	1000	.024			1		1	1.49
0950	Poor condition	"	275	.087			3.63		3.63	5.45
1100	Far high finish requirement or close tolerance, add						50%			
1150	Very high						110%			

03 37 13.60 Shotcrete (Wet-Mix)

0010	SHOTCRETE (WET-MIX)									
0020	Wet mix, placed @ up to 12 C.Y. per hour, 3000 psi	C-8C	80	.600	C.Y.	103	24	5.70	132.70	156
0100	Up to 35 C.Y. per hour	C-8E	240	.200	"	92.50	8	2.23	102.73	117
1010	Fiber reinforced, 1" thick	C-8C	1740	.028	S.F.	.76	1.11	.26	2.13	2.82
1020	2" thick		900	.053		1.53	2.15	.51	4.19	5.50
1030	3" thick		825	.058		2.29	2.34	.55	5.18	6.70
1040	4" thick	▼	750	.064	▼	3.06	2.58	.61	6.25	7.95

03 39 Concrete Curing

03 39 13 – Water Concrete Curing

03 39 13.50 Water Curing

0010	WATER CURING									
0015	With burlap, 4 uses assumed, 7.5 oz.	2 Clob	55	.291	C.S.F.	14.70	10.65		25.35	32.50
0100	10 oz.	"	55	.291	"	26.50	10.65		37.15	45.50
0400	Curing blankets, 1" to 2" thick, buy				S.F.	.19			.19	.21

03 39 23 – Membrane Concrete Curing

03 39 23.13 Chemical Compound Membrane Concrete Curing

0010	CHEMICAL COMPOUND MEMBRANE CONCRETE CURING									
0300	Sprayed membrane curing compound	2 Clob	95	.168	C.S.F.	10.95	6.15		17.10	21.50
0700	Curing compound, solvent based, 400 S.F./gal., 55 gallon lots				Gal.	23.50			23.50	25.50
0720	5 gallon lots					29.50			29.50	32.50
0800	Curing compound, water based, 250 S.F./gal., 55 gallon lots					22			22	24.50
0820	5 gallon lots				▼	25			25	27.50

03 39 23.23 Sheet Membrane Concrete Curing

0010	SHEET MEMBRANE CONCRETE CURING									
0200	Curing blanket, burlap/paly, 2-ply	2 Clob	70	.229	C.S.F.	19.05	8.40		27.45	34

03 41 Precast Structural Concrete

03 41 13 – Precast Concrete Hollow Core Planks

03 41 13.50 Precast Slab Planks		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010	PRECAST SLAB PLANKS						Labor	Equipment		
	R034105-30									
0020	Prestressed roof/floor members, grouted, solid, 4" thick	C-11	2400	.030	S.F.	5.85	1.51	.77	8.13	9.90
0050	6" thick		2800	.026		6.30	1.30	.66	8.26	9.85
0100	Hollow, 8" thick		3200	.023		7.10	1.13	.57	8.80	10.35
0150	10" thick		3600	.020		7.30	1.01	.51	8.82	10.30
0200	12" thick		4000	.018		7.90	.91	.46	9.27	10.70

03 41 16 – Precast Concrete Slabs

03 41 16.20 Precast Concrete Channel Slabs

0010	PRECAST CONCRETE CHANNEL SLABS									
0335	Lightweight concrete chonnel slob, long runs, 2-3/4" thick	C-12	1575	.030	S.F.	8	1.38	.42	9.80	11.40
0375	3-3/4" thick		1550	.031		8.30	1.41	.43	10.14	11.75
0475	4-3/4" thick		1525	.031		8.95	1.43	.43	10.81	12.55
1275	Short pieces, 2-3/4" thick		785	.061		12	2.78	.84	15.62	18.40
1375	3-3/4" thick		770	.062		12.45	2.83	.86	16.14	19
1475	4-3/4" thick		762	.063		13.45	2.86	.87	17.18	20

03 41 16.50 Precast Lightweight Concrete Plank

0010	PRECAST LIGHTWEIGHT CONCRETE PLANK									
0015	Lightweight plank, noiloble, T&G, 2" thick	C-12	1800	.027	S.F.	7.05	1.21	.37	8.63	10
0150	For premium ceiling finish, add				"	10%				
0200	For sloping roofs, slope over 4 in 12, odd						25%			
0250	Slope over 6 in 12, odd						150%			

03 41 23 – Precast Concrete Stairs

03 41 23.50 Precast Stairs

0010	PRECAST STAIRS									
0020	Precast concrete treads on steel stringers, 3' wide	C-12	75	.640	Riser	134	29	8.85	171.85	201
0300	Front entrance, 5' wide with 48" platform, 2 risers		16	3	Flight	485	136	41.50	662.50	785
0350	5 risers		12	4		765	182	55	1,002	1,175
0500	6' wide, 2 risers		15	3.200		535	145	44	724	860
0550	5 risers		11	4.364		845	198	60.50	1,103.50	1,300
0700	7' wide, 2 risers		14	3.429		685	156	47.50	888.50	1,050
0750	5 risers		10	4.800		1,125	218	66.50	1,409.50	1,650
1200	Bosement entrance stairwell, 6 steps, incl. steel bulkhead door	B-51	22	2.182		1,450	80.50	12.30	1,542.80	1,725
1250	14 steps	"	11	4.364		2,400	161	24.50	2,585.50	2,900

03 41 33 – Precast Structural Pretensioned Concrete

03 41 33.10 Precast Beams

0010	PRECAST BEAMS									
	R034105-30									
0011	L-shaped, 20' spon, 12" x 20"	C-11	32	2.250	Eq.	2,900	113	57.50	3,070.50	3,450
0060	18" x 36"		24	3		3,975	151	76.50	4,202.50	4,725
0100	24" x 44"		22	3.273		4,775	165	83.50	5,023.50	5,625
0150	30' spon, 12" x 36"		24	3		5,375	151	76.50	5,602.50	6,275
0200	18" x 44"		20	3.600		6,550	181	92	6,823	7,600
0250	24" x 52"		16	4.500		7,850	227	115	8,192	9,175
0400	40' spon, 12" x 52"		20	3.600		8,350	181	92	8,623	9,575
0450	18" x 52"		16	4.500		9,325	227	115	9,667	10,800
0500	24" x 52"		12	6		10,500	300	153	10,953	12,200
1200	Rectongulor, 20' spon, 12" x 20"		32	2.250		2,825	113	57.50	2,995.50	3,350
1250	18" x 36"		24	3		3,500	151	76.50	3,727.50	4,200
1300	24" x 44"		22	3.273		4,175	165	83.50	4,423.50	4,975
1400	30' spon, 12" x 36"		24	3		4,700	151	76.50	4,927.50	5,525
1450	18" x 44"		20	3.600		5,675	181	92	5,948	6,625
1500	24" x 52"		16	4.500		6,850	227	115	7,192	8,050

03 41 Precast Structural Concrete

03 41 33 – Precast Structural Pretensioned Concrete

03 41 33.10 Precast Beams		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1600	40' span, 12" x 52"	C-11	20	3.600	Ea.	6,975	181	92	7,248	8,075
1650	18" x 52"		16	4.500		7,950	227	115	8,292	9,275
1700	24" x 52"		12	6		9,125	300	153	9,578	10,700
2000	"T" shaped, 20' span, 12" x 20"		32	2.250		3,325	113	57.50	3,495.50	3,900
2050	18" x 36"		24	3		4,450	151	76.50	4,677.50	5,250
2100	24" x 44"		22	3.273		5,350	165	83.50	5,598.50	6,250
2200	30' span, 12" x 36"		24	3		6,125	151	76.50	6,352.50	7,075
2250	18" x 44"		20	3.600		7,425	181	92	7,698	8,550
2300	24" x 52"		16	4.500		8,875	227	115	9,217	10,300
2500	40' span, 12" x 52"		20	3.600		10,100	181	92	10,373	11,500
2550	18" x 52"		16	4.500		10,700	227	115	11,042	12,300
2600	24" x 52"		12	6		11,800	300	153	12,253	13,700

03 41 33.15 Precast Columns

0010	PRECAST COLUMNS	R034105-30								
0020	Rectangular to 12' high, 16" x 16"	C-11	120	.600	L.F.	166	30	15.30	211.30	252
0050	24" x 24"		96	.750		228	38	19.15	285.15	335
0300	24' high, 28" x 28"		192	.375		265	18.90	9.55	293.45	335
0350	36" x 36"		144	.500		355	25	12.75	392.75	445

03 41 33.25 Precast Joists

0010	PRECAST JOISTS	R034105-30								
0015	40 psf L.L., 6" deep for 12' spans	C-12	600	.080	L.F.	23.50	3.63	1.10	28.23	32.50
0050	8" deep for 16' spans		575	.083		38.50	3.79	1.15	43.44	49.50
0100	10" deep for 20' spans		550	.087		67.50	3.96	1.21	72.67	82
0150	12" deep for 24' spans		525	.091		93	4.15	1.26	98.41	110

03 41 33.60 Precast Tees

0010	PRECAST TEES	R034105-30								
0020	Quod tee, short spans, roof	C-11	7200	.010	S.F.	7.65	.50	.26	8.41	9.55
0050	Floor		7200	.010		7.65	.50	.26	8.41	9.55
0200	Double tee, floor members, 60' span		8400	.009		9.10	.43	.22	9.75	11
0250	80' span		8000	.009		11.80	.45	.23	12.48	14.05
0300	Raaf members, 30' span		4800	.015		7.65	.76	.38	8.79	10.10
0350	50' spon		6400	.011		8.40	.57	.29	9.26	10.55
0400	Wall members, up to 55' high		3600	.020		11.35	1.01	.51	12.87	14.80
0500	Single tee raaf members, 40' span		3200	.023		11.30	1.13	.57	13	14.95
0550	80' span		5120	.014		11.70	.71	.36	12.77	14.45
0600	100' spon		6000	.012		17.15	.60	.31	18.06	20
0650	120' span		6000	.012		18.80	.60	.31	19.71	22
1000	Dauble tees, floor members									
1100	Lightweight, 20" x 8' wide, 45' span	C-11	20	3.600	Ea.	3,025	181	92	3,298	3,725
1150	24" x 8' wide, 50' span		18	4		3,350	202	102	3,654	4,150
1200	32" x 10' wide, 60' span		16	4.500		5,050	227	115	5,392	6,075
1250	Stondord weight, 12" x 8' wide, 20' spon		22	3.273		1,225	165	83.50	1,473.50	1,725
1300	16" x 8' wide, 25' spon		20	3.600		1,525	181	92	1,798	2,075
1350	18" x 8' wide, 30' spon		20	3.600		1,825	181	92	2,098	2,425
1400	20" x 8' wide, 45' spon		18	4		2,750	202	102	3,054	3,475
1450	24" x 8' wide, 50' spon		16	4.500		3,050	227	115	3,392	3,875
1500	32" x 10' wide, 60' spon		14	5.143		4,575	259	131	4,965	5,650
2000	Roaf members									
2050	Lightweight, 20" x 8' wide, 40' span	C-11	20	3.600	Ea.	2,700	181	92	2,973	3,350
2100	24" x 8' wide, 50' spon		18	4		3,350	202	102	3,654	4,150
2150	32" x 10' wide, 60' spon		16	4.500		5,050	227	115	5,392	6,075
2200	Standord weight, 12" x 8' wide, 30' spon		22	3.273		1,825	165	83.50	2,073.50	2,400

03 41 Precast Structural Concrete

03 41 33 – Precast Structural Pretensioned Concrete

03 41 33.60 Precast Tees		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2250	16" x 8' wide, 30' span	C-11	20	3.600	Ea.	1,925	181	92	2,198	2,525
2300	18" x 8' wide, 30' span		20	3.600		2,025	181	92	2,298	2,625
2350	20" x 8' wide, 40' span		18	4		2,450	202	102	2,754	3,150
2400	24" x 8' wide, 50' span		16	4.500		3,050	227	115	3,392	3,875
2450	32" x 10' wide, 60' span		14	5.143		4,575	259	131	4,965	5,650

03 45 Precast Architectural Concrete

03 45 13 – Faced Architectural Precast Concrete

03 45 13.50 Precast Wall Panels

0010	PRECAST WALL PANELS	R034513-10								
0050	Uninsulated, smooth gray									
0150	Low rise, 4' x 8' x 4" thick	C-11	320	.225	S.F.	20.50	11.35	5.75	37.60	49
0210	8' x 8', 4" thick		576	.125		20.50	6.30	3.19	29.99	37
0250	8' x 16' x 4" thick		1024	.070		20.50	3.54	1.80	25.84	30.50
0600	High rise, 4' x 8' x 4" thick		288	.250		20.50	12.60	6.40	39.50	51.50
0650	8' x 8' x 4" thick		512	.141		20.50	7.10	3.59	31.19	38.50
0700	8' x 16' x 4" thick		768	.094		20.50	4.72	2.39	27.61	33
0750	10' x 20', 6" thick		1400	.051		34.50	2.59	1.31	38.40	44
0800	Insulated panel, 2" polystyrene, add					1.05			1.05	1.16
0850	2" urethane, add					.79			.79	.87
1200	Finishes, white, add					2.68			2.68	2.95
1250	Exposed aggregate, add					2.10			2.10	2.31
1300	Gronite faced, domestic, add					29.50			29.50	32.50
1350	Brick faced, modular, red, add					8.75			8.75	9.65
2200	Fiberglass reinforced cement with urethane core									
2210	R20, 8' x 8', 5" plain finish	E-2	750	.075	S.F.	21	3.75	2.04	26.79	32
2220	Exposed aggregate or brick finish	"	600	.093	"	32	4.68	2.55	39.23	46

03 47 Site-Cast Concrete

03 47 13 – Tilt-Up Concrete

03 47 13.50 Tilt-Up Wall Panels

0010	TILT-UP WALL PANELS	R034713-20								
0015	Wall panel construction, walls only, 5-1/2" thick	C-14	1600	.090	S.F.	5.40	4.04	1.03	10.47	13.30
0100	7-1/2" thick		1550	.093		6.75	4.17	1.07	11.99	14.95
0500	Walls and columns, 5-1/2" thick walls, 12" x 12" columns		1565	.092		8.15	4.13	1.06	13.34	16.45
0550	7-1/2" thick wall, 12" x 12" columns		1370	.105		9.95	4.72	1.21	15.88	19.55
0800	Columns only, site precast, 12" x 12"		200	.720	L.F.	19.65	32.50	8.25	60.40	80.50
0850	16" x 16"		105	1.371	"	28.50	61.50	15.75	105.75	144

03 48 Precast Concrete Specialties

03 48 43 – Precast Concrete Trim

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
03 48 43.40	Precast Lintels						Labor	Equipment		
0010	PRECAST LINTELS, smooth gray, prestressed, stock units only									
0800	4" wide, 8" high, x 4' long	D-10	28	1.143	Eq.	23.50	51.50	17.20	92.20	123
0850	8' long		24	1.333		57	60	20	137	176
1000	6" wide, 8" high, x 4' long		26	1.231		33.50	55.50	18.50	107.50	142
1050	10' long		22	1.455		86	65.50	22	173.50	219
1200	8" wide, 8" high, x 4' long		24	1.333		42.50	60	20	122.50	160
1250	12' long	▼	20	1.600		138	72	24	234	289
1275	For custom sizes, types, colors, or finishes of precast lintels, odd				▼	150%				

03 48 43.90 Precast Window Sills

0010	PRECAST WINDOW SILLS									
0600	Precast concrete, 4" toppers to 3", 9" wide	D-1	70	.229	L.F.	11.90	9.45		21.35	27.50
0650	11" wide		60	.267		15.55	11		26.55	34
0700	13" wide, 3 1/2" toppers to 2 1/2", 12" wall		50	.320		15.50	13.20		28.70	37

03 51 Cast Roof Decks

03 51 13 – Cementitious Wood Fiber Decks

03 51 13.50 Cementitious/Wood Fiber Planks

0010	CEMENTITIOUS/WOOD FIBER PLANKS	R051223-50								
0050	Plank, beveled edge, 1" thick		2 Corp	1000	.016	S.F.	2.20	.73		2.93 3.55
0100	1-1/2" thick			975	.016		2.90	.75		3.65 4.35
0150	T & G, 2" thick			950	.017		2.40	.77		3.17 3.83
0200	2-1/2" thick			925	.017		2.70	.79		3.49 4.19
0250	3" thick		▼	900	.018		3	.82		3.82 4.56
1000	Bulb tee, sub-purlin and grout, 6' span, odd		E-1	5000	.005		2.14	.24	.03	2.41 2.79
1100	8' span		"	4200	.006	▼	2.14	.29	.03	2.46 2.88

03 51 16 – Gypsum Concrete Roof Decks

03 51 16.50 Gypsum Roof Deck

0010	GYPSUM ROOF DECK									
1000	Poured gypsum, 2" thick		C-8	6000	.009	S.F.	1.34	.38	.12	1.84 2.18
1100	3" thick		"	4800	.012	"	2.01	.48	.15	2.64 3.09

03 52 Lightweight Concrete Roof Insulation

03 52 16 – Lightweight Insulating Concrete

03 52 16.13 Lightweight Cellular Insulating Concrete

0010	LIGHTWEIGHT CELLULAR INSULATING CONCRETE	R035216-10								
0020	Portland cement and foaming agent		C-8	50	1.120	C.Y.	115	45.50	14.20	174.70 211

03 52 16.16 Lightweight Aggregate Insulating Concrete

0010	LIGHTWEIGHT AGGREGATE INSULATING CONCRETE	R035216-10								
0100	Poured vermiculite or perlite, field mix,									
0110	1:6 field mix		C-8	50	1.120	C.Y.	251	45.50	14.20	310.70 360
0200	Ready mix, 1:6 mix, roof fill, 2" thick			10000	.006	S.F.	1.39	.23	.07	1.69 1.96
0250	3" thick		▼	7700	.007		2.09	.30	.09	2.48 2.85
0400	Expanded volcanic glass rock, 1" thick		2 Corp	1500	.011		.55	.49		1.04 1.35
0450	3" thick		"	1200	.013	▼	1.64	.61		2.25 2.75

03 53 Concrete Topping

03 53 16 – Iron-Aggregate Concrete Topping

03 53 16.50 Floor Topping					2014 Bare Costs		Total	Total Incl O&P
0010 FLOOR TOPPING		Crew	Daily Output	Labor-Hours Unit	Material	Labor	Equipment	
0400	Integral topping and finish, using 1:1:2 mix, 3/16" thick	C-10B	1000	.040 S.F.	.10	1.58	.28	1.96 2.82
0450	1/2" thick		950	.042	.26	1.67	.30	2.23 3.15
0500	3/4" thick		850	.047	.39	1.86	.33	2.58 3.62
0600	1" thick		750	.053	.52	2.11	.38	3.01 4.20
0800	Granolithic topping, laid after, 1:1:1-1/2 mix, 1/2" thick		590	.068	.29	2.69	.48	3.46 4.92
0820	3/4" thick		580	.069	.43	2.73	.49	3.65 5.15
0850	1" thick		575	.070	.58	2.76	.49	3.83 5.35
0950	2" thick		500	.080	1.16	3.17	.57	4.90 6.70
1200	Heavy duty, 1:1:2, 3/4" thick, preshrunk, gray, 20 M.S.F.		320	.125	.73	4.95	.89	6.57 9.30
1300	100 M.S.F.		380	.105	.39	4.17	.75	5.31 7.55

03 54 Cast Underlayment

03 54 13 – Gypsum Cement Underlayment

03 54 13.50 Poured Gypsum Underlayment

0010 POURED GYPSUM UNDERLAYMENT					2014 Bare Costs		Total	Total Incl O&P
0400		Crew	Daily Output	Labor-Hours Unit	Material	Labor	Equipment	
0400	Underlayment, gypsum based, self-leveling 2500 psi, pumped, 1/2" thick	C-8	24000	.002 S.F.	.33	.10	.03	.46 .54
0500	3/4" thick		20000	.003	.50	.11	.04	.65 .76
0600	1" thick		16000	.004	.67	.14	.04	.85 1.01
1400	Hand placed, 1/2" thick	C-18	450	.020	.33	.74	.13	1.20 1.66
1500	3/4" thick	"	300	.030	.50	1.11	.20	1.81 2.48

03 54 16 – Hydraulic Cement Underlayment

03 54 16.50 Cement Underlayment

0010 CEMENT UNDERLAYMENT					2014 Bare Costs		Total	Total Incl O&P
2510		Crew	Daily Output	Labor-Hours Unit	Material	Labor	Equipment	
2510	Underlayment, P.C based, self-leveling, 4100 psi, pumped, 1/4" thick	C-8	20000	.003 S.F.	1.49	.11	.04	1.64 1.85
2520	1/2" thick		19000	.003	2.99	.12	.04	3.15 3.51
2530	3/4" thick		18000	.003	4.48	.13	.04	4.65 5.15
2540	1" thick		17000	.003	6	.13	.04	6.17 6.85
2550	1-1/2" thick		15000	.004	8.95	.15	.05	9.15 10.15
2560	Hand placed, 1/2" thick	C-18	450	.020	2.99	.74	.13	3.86 4.58
2610	Topping, P.C based, self-leveling, 6100 psi, pumped, 1/4" thick	C-8	20000	.003	2.18	.11	.04	2.33 2.61
2620	1/2" thick		19000	.003	4.37	.12	.04	4.53 5
2630	3/4" thick		18000	.003	6.55	.13	.04	6.72 7.45
2660	1" thick		17000	.003	8.75	.13	.04	8.92 9.85
2670	1-1/2" thick		15000	.004	13.10	.15	.05	13.30 14.70
2680	Hand placed, 1/2" thick	C-18	450	.020	4.37	.74	.13	5.24 6.10

03 62 Non-Shrink Grouting

03 62 13 – Non-Metallic Non-Shrink Grouting

03 62 13.50 Grout, Non-Metallic Non-shrink

0010 GROUT, NON-METALLIC NON-SHRINK					2014 Bare Costs		Total	Total Incl O&P
0300		Crew	Daily Output	Labor-Hours Unit	Material	Labor		
0300	Non-shrink, non-metallic, 1" deep	1 Cefi	35	.229 S.F.	6.15	10.05	16.20	21.50
0350	2" deep	"	25	.320	12.30	14.10	26.40	34.50

03 62 16 – Metallic Non-Shrink Grouting

03 62 16.50 Grout, Metallic Non-Shrink

0010 GROUT, METALLIC NON-SHRINK					2014 Bare Costs		Total	Total Incl O&P
0020		Crew	Daily Output	Labor-Hours Unit	Material	Labor		
0020	Column & machine bases, non-shrink, metallic, 1" deep	1 Cefi	35	.229 S.F.	8.50	10.05	18.55	24.50
0050	2" deep	"	25	.320	16.95	14.10	31.05	39.50

03 63 Epoxy Grouting

03 63 05 – Grouting of Dowels and Fasteners

03 63 05.10 Epoxy Only		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010	EPOXY ONLY						Labor	Equipment		
1500	Chemical anchoring, epoxy cortridge, excludes layout, drilling, fastener									
1530	For fastener 3/4" diam. x 6" embedment	2 Skwk	72	.222	Ea.	5.55	10.50		16.05	22.50
1535	1" diam. x 8" embedment		66	.242		8.30	11.45		19.75	27
1540	1-1/4" diam. x 10" embedment		60	.267		16.60	12.60		29.20	38
1545	1-3/4" diam. x 12" embedment		54	.296		27.50	14		41.50	52
1550	14" embedment		48	.333		33	15.75		48.75	61
1555	2" diam. x 12" embedment		42	.381		44.50	18		62.50	76.50
1560	18" embedment		32	.500		55.50	23.50		79	97.50

03 81 Concrete Cutting

03 81 13 – Flat Concrete Sawing

03 81 13.50 Concrete Floor/Slab Cutting

0010	CONCRETE FLOOR/SLAB CUTTING									
0050	Includes blade cost, layout and set-up time									
0300	Saw cut concrete slabs, plain, up to 3" deep	B-89	1060	.015	L.F.	.13	.63	.50	1.26	1.66
0320	Each additional inch of depth		3180	.005		.04	.21	.17	.42	.55
0400	Mesh reinforced, up to 3" deep		980	.016		.15	.68	.54	1.37	1.79
0420	Each additional inch of depth		2940	.005		.05	.23	.18	.46	.60
0500	Rod reinforced, up to 3" deep		800	.020		.19	.84	.66	1.69	2.19
0520	Each additional inch of depth		2400	.007		.06	.28	.22	.56	.73

03 81 13.75 Concrete Saw Blades

0010	CONCRETE SAW BLADES									
3000	Blades for saw cutting, included in cutting line items									
3020	Diamond, 12" diameter				Ea.	244			244	269
3040	18" diameter					445			445	490
3080	24" diameter					755			755	830
3120	30" diameter					1,100			1,100	1,200
3160	36" diameter					1,425			1,425	1,575
3200	42" diameter					2,700			2,700	2,975

03 81 16 – Track Mounted Concrete Wall Sawing

03 81 16.50 Concrete Wall Cutting

0010	CONCRETE WALL CUTTING									
0750	Includes blade cost, layout and set-up time									
0800	Concrete walls, hydraulic saw, plain, per inch of depth	B-89B	250	.064	L.F.	.04	2.67	3.64	6.35	8.10
0820	Rod reinforcing, per inch of depth	"	150	.107	"	.06	4.46	6.05	10.57	13.50

03 82 Concrete Boring

03 82 13 – Concrete Core Drilling

03 82 13.10 Core Drilling

0010	CORE DRILLING									
0015	Includes bit cost, layout and set-up time									
0020	Reinforced concrete slab, up to 6" thick									
0100	1" diameter core	B-89A	17	.941	Ea.	.18	39.50	6.85	46.53	68.50
0150	For each additional inch of slab thickness in same hole, add		1440	.011		.03	.47	.08	.58	.84
0200	2" diameter core		16.50	.970		.29	40.50	7.05	47.84	71
0250	For each additional inch of slab thickness in same hole, add		1080	.015		.05	.62	.11	.78	1.13
0300	3" diameter core		16	1		.39	42	7.25	49.64	73.50

03 82 Concrete Boring

03 82 13 – Concrete Core Drilling

03 82 13.10 Core Drilling

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0350	For each additional inch of slab thickness in same hole, add	B-89A	720	.022	Ea.	.07	.93	.16	1.16	1.69
0500	4" diameter core		15	1.067		.50	45	7.75	53.25	78
0550	For each additional inch of slab thickness in same hole, add		480	.033		.08	1.40	.24	1.72	2.52
0700	6" diameter core		14	1.143		.78	48	8.30	57.08	84
0750	For each additional inch of slab thickness in same hole, add		360	.044		.13	1.87	.32	2.32	3.38
0900	8" diameter core		13	1.231		1.08	51.50	8.95	61.53	91
0950	For each additional inch of slab thickness in same hole, add		288	.056		.18	2.33	.40	2.91	4.25
1100	10" diameter core		12	1.333		1.51	56	9.70	67.21	99
1150	For each additional inch of slab thickness in same hole, add		240	.067		.25	2.80	.48	3.53	5.15
1300	12" diameter core		11	1.455		1.79	61	10.55	73.34	108
1350	For each additional inch of slab thickness in same hole, add		206	.078		.30	3.26	.56	4.12	6
1500	14" diameter core		10	1.600		2.11	67	11.60	80.71	119
1550	For each additional inch of slab thickness in same hole, add		180	.089		.35	3.73	.65	4.73	6.85
1700	18" diameter core		9	1.778		2.84	74.50	12.90	90.24	132
1750	For each additional inch of slab thickness in same hole, add		144	.111		.47	4.66	.81	5.94	8.60
1754	24" diameter core		8	2		3.99	84	14.50	102.49	150
1756	For each additional inch of slab thickness in same hole, add		120	.133		.67	5.60	.97	7.24	10.45
1760	For horizontal holes, add to above						20%	20%		
1770	Prestressed hollow core plank, 8" thick									
1780	1" diameter core	B-89A	17.50	.914	Ea.	.24	38.50	6.65	45.39	67
1790	For each additional inch of plank thickness in same hole, add		3840	.004		.03	.18	.03	.24	.33
1794	2" diameter core		17.25	.928		.38	39	6.75	46.13	68
1796	For each additional inch of plank thickness in same hole, add		2880	.006		.05	.23	.04	.32	.45
1800	3" diameter core		17	.941		.52	39.50	6.85	46.87	69
1810	For each additional inch of plank thickness in same hole, add		1920	.008		.07	.35	.06	.48	.68
1820	4" diameter core		16.50	.970		.66	40.50	7.05	48.21	71.50
1830	For each additional inch of plank thickness in same hole, add		1280	.013		.08	.52	.09	.69	1
1840	6" diameter core		15.50	1.032		1.04	43.50	7.50	52.04	76.50
1850	For each additional inch of plank thickness in same hole, add		960	.017		.13	.70	.12	.95	1.35
1860	8" diameter core		15	1.067		1.44	45	7.75	54.19	79
1870	For each additional inch of plank thickness in same hole, add		768	.021		.18	.87	.15	1.20	1.72
1880	10" diameter core		14	1.143		2.01	48	8.30	58.31	85.50
1890	For each additional inch of plank thickness in same hole, add		640	.025		.25	1.05	.18	1.48	2.10
1900	12" diameter core		13.50	1.185		2.39	50	8.60	60.99	89
1910	For each additional inch of plank thickness in same hole, add		548	.029		.30	1.23	.21	1.74	2.46
3000	Bits for core drilling, included in drilling line items									
3010	Diamond, premium, 1" diameter				Ea.	72			72	79.50
3020	2" diameter					115			115	127
3030	3" diameter					157			157	173
3040	4" diameter					199			199	219
3060	6" diameter					315			315	345
3080	8" diameter					435			435	475
3110	10" diameter					605			605	665
3120	12" diameter					715			715	790
3140	14" diameter					845			845	930
3180	18" diameter					1,125			1,125	1,250
3240	24" diameter					1,600			1,600	1,750

03 82 Concrete Boring

03 82 16 – Concrete Drilling

03 82 16.10 Concrete Impact Drilling		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment	
0010	CONCRETE IMPACT DRILLING									
0020	Includes bit cost, layout and set-up time, no anchors									
0050	Up to 4" deep in concrete/brick floors/walls									
0100	Holes, 1/4" diameter	1 Corp	75	.107	Eo.	.06		4.89		4.95 7.60
0150	For each additional inch of depth in some hole, odd		430	.019		.02		.85		.87 1.34
0200	3/8" diameter		63	.127		.05		5.80		5.85 9.05
0250	For each additional inch of depth in some hole, odd		340	.024		.01		1.08		1.09 1.67
0300	1/2" diameter		50	.160		.05		7.35		7.40 11.35
0350	For each additional inch of depth in some hole, odd		250	.032		.01		1.47		1.48 2.27
0400	5/8" diameter		48	.167		.08		7.65		7.73 11.90
0450	For each additional inch of depth in some hole, odd		240	.033		.02		1.53		1.55 2.38
0500	3/4" diameter		45	.178		.11		8.15		8.26 12.70
0550	For each additional inch of depth in some hole, odd		220	.036		.03		1.67		1.70 2.60
0600	7/8" diameter		43	.186		.15		8.55		8.70 13.30
0650	For each additional inch of depth in some hole, odd		210	.038		.04		1.75		1.79 2.74
0700	1" diameter		40	.200		.16		9.15		9.31 14.35
0750	For each additional inch of depth in some hole, odd		190	.042		.04		1.93		1.97 3.02
0800	1-1/4" diameter		38	.211		.23		9.65		9.88 15.15
0850	For each additional inch of depth in some hole, odd		180	.044		.06		2.04		2.10 3.20
0900	1-1/2" diameter		35	.229		.32		10.50		10.82 16.50
0950	For each additional inch of depth in some hole, odd	▼	165	.048	▼	.08		2.22		2.30 3.52
1000	For ceiling installations, odd							40%		

Division Notes

[illegible]

Estimating Tips

04 05 00 Common Work Results for Masonry

- The terms *mortar* and *grout* are often used interchangeably, and incorrectly. Mortar is used to bed masonry units, seal the entry of air and moisture, provide architectural appearance, and allow for size variations in the units. Grout is used primarily in reinforced masonry construction and is used to bond the masonry to the reinforcing steel. Common mortar types are M(2500 psi), S(1800 psi), N(750 psi), and O(350 psi), and conform to ASTM C270. Grout is either fine or coarse and conforms to ASTM C476, and in-place strengths generally exceed 2500 psi. Mortar and grout are different components of masonry construction and are placed by entirely different methods. An estimator should be aware of their unique uses and costs.
- Mortar is included in all assembled masonry line items. The mortar cost, part of the assembled masonry material cost, includes all ingredients, all labor, and all equipment required. Please see reference number R040513-10.
- Waste, specifically the loss/droppings of mortar and the breakage of brick and block, is included in all masonry assemblies in this division. A factor of 25% is added for mortar and 3% for brick and concrete masonry units.

- Scaffolding or staging is not included in any of the Division 4 costs. Refer to Subdivision 01 54 23 for scaffolding and staging costs.

04 20 00 Unit Masonry

- The most common types of unit masonry are brick and concrete masonry. The major classifications of brick are building brick (ASTM C62), facing brick (ASTM C216), glazed brick, fire brick, and pavers. Many varieties of texture and appearance can exist within these classifications, and the estimator would be wise to check local custom and availability within the project area. For repair and remodeling jobs, matching the existing brick may be the most important criteria.
- Brick and concrete block are priced by the piece and then converted into a price per square foot of wall. Openings less than two square feet are generally ignored by the estimator because any savings in units used is offset by the cutting and trimming required.
- It is often difficult and expensive to find and purchase small lots of historic brick. Costs can vary widely. Many design issues affect costs, selection of mortar mix, and repairs or replacement of masonry materials. Cleaning techniques must be reflected in the estimate.

- All masonry walls, whether interior or exterior, require bracing. The cost of bracing walls during construction should be included by the estimator, and this bracing must remain in place until permanent bracing is complete. Permanent bracing of masonry walls is accomplished by masonry itself, in the form of pilasters or abutting wall corners, or by anchoring the walls to the structural frame. Accessories in the form of anchors, anchor slots, and ties are used, but their supply and installation can be by different trades. For instance, anchor slots on spandrel beams and columns are supplied and welded in place by the steel fabricator, but the ties from the slots into the masonry are installed by the bricklayer. Regardless of the installation method, the estimator must be certain that these accessories are accounted for in pricing.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

04 01 Maintenance of Masonry

04 01 20 – Maintenance of Unit Masonry

04 01 20.20 Pointing Masonry		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	POINTING MASONRY									
0300	Cut and repoint brick, hard mortar, running bond	1 Bric	80	.100	S.F.	.51	4.56		5.07	7.50
0320	Common bond		77	.104		.51	4.74		5.25	7.75
0360	Flemish bond		70	.114		.54	5.20		5.74	8.55
0400	English bond		65	.123		.54	5.60		6.14	9.15
0600	Soft old mortar, running bond		100	.080		.51	3.65		4.16	6.10
0620	Common bond		96	.083		.51	3.80		4.31	6.35
0640	Flemish bond		90	.089		.54	4.05		4.59	6.80
0680	English bond		82	.098		.54	4.45		4.99	7.40
0700	Stonework, hard mortar		140	.057	L.F.	.68	2.61		3.29	4.72
0720	Soft old mortar		160	.050	"	.68	2.28		2.96	4.23
1000	Repoint, mask and grout method, running bond		95	.084	S.F.	.68	3.84		4.52	6.60
1020	Common bond		90	.089		.68	4.05		4.73	6.95
1040	Flemish bond		86	.093		.72	4.24		4.96	7.25
1060	English bond		77	.104		.72	4.74		5.46	8
2000	Scrub coat, sand grout on walls, thin mix, brushed		120	.067		2.72	3.04		5.76	7.60
2020	Troweled		98	.082		3.79	3.72		7.51	9.80

04 01 20.30 Pointing CMU

0010	POINTING CMU									
0300	Cut and repoint block, hard mortar, running bond	1 Bric	190	.042	S.F.	.21	1.92		2.13	3.16
0310	Stocked bond		200	.040		.21	1.82		2.03	3.01
0600	Soft old mortar, running bond		230	.035		.21	1.59		1.80	2.65
0610	Stocked bond		245	.033		.21	1.49		1.70	2.50

04 01 20.40 Sawing Masonry

0010	SAWING MASONRY									
0050	Brick or block by hand, per inch depth	A-1	125	.064	L.F.	.06	2.35	.67	3.08	4.43

04 01 20.41 Unit Masonry Stabilization

0010	UNIT MASONRY STABILIZATION									
0100	Structural repointing method									
0110	Cut / grind mortar joint	1 Bric	240	.033	L.F.		1.52		1.52	2.32
0120	Clean and mask joint		2500	.003		.13	.15		.28	.36
0130	Epoxy paste and 1/4" FRP rod		240	.033		1.07	1.52		2.59	3.50
0132	3/8" FRP rod		160	.050		1.63	2.28		3.91	5.25
0134	1/4" CFRP rod		240	.033		13.90	1.52		15.42	17.55
0136	3/8" CFRP rod		160	.050		17.50	2.28		19.78	22.50
0140	Remove masking		14400	.001			.03		.03	.04
0300	Structural fabric method									
0310	Primer	1 Bric	600	.013	S.F.	.46	.61		1.07	1.43
0320	Apply filling/leveling paste		720	.011		.43	.51		.94	1.24
0330	Epoxy, glass fiber fabric		720	.011		5.65	.51		6.16	6.95
0340	Carbon fiber fabric		720	.011		15.45	.51		15.96	17.75

04 01 30 – Unit Masonry Cleaning

04 01 30.20 Cleaning Masonry

0010	CLEANING MASONRY									
0200	By chemical, brush and rinse, new work, light construction dust	D-1	1000	.016	S.F.	.06	.66		.72	1.07
0220	Medium construction dust		800	.020		.08	.83		.91	1.35
0240	Heavy construction dust, drips or stains		600	.027		.11	1.10		1.21	1.80
0260	Low pressure wash and rinse, light restoration, light soil		800	.020		.12	.83		.95	1.40
0270	Average soil, biological staining		400	.040		.18	1.65		1.83	2.72
0280	Heavy soil, biological and mineral staining, point		330	.048		.25	2		2.25	3.32
0300	High pressure wash and rinse, heavy restoration, light soil		600	.027		.11	1.10		1.21	1.80

04 01 Maintenance of Masonry

04 01 30 – Unit Masonry Cleaning

04 01 30.20 Cleaning Masonry		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0310	Average soil, biological staining	D-1	400	.040	S.F.	.16	1.65		1.81	2.70
0320	Heavy soil, biological and mineral staining, paint	↓	250	.064		.22	2.64		2.86	4.27
0400	High pressure wash, water only, light soil	C-29	500	.016			.59	.14	.73	1.05
0420	Average soil, biological staining		375	.021			.78	.19	.97	1.41
0440	Heavy soil, biological and mineral staining, paint		250	.032			1.17	.28	1.45	2.12
0800	High pressure water and chemical, light soil		450	.018		.15	.65	.15	.95	1.34
0820	Average soil, biological staining		300	.027		.22	.98	.23	1.43	2
0840	Heavy soil, biological and mineral staining, paint	↓	200	.040		.30	1.47	.35	2.12	2.97
1200	Sandblast, wet system, light soil	J-6	1750	.018		.33	.74	.14	1.21	1.65
1220	Average soil, biological staining		1100	.029		.50	1.18	.22	1.90	2.59
1240	Heavy soil, biological and mineral staining, paint		700	.046		.67	1.86	.34	2.87	3.93
1400	Dry system, light soil		2500	.013		.33	.52	.09	.94	1.26
1420	Average soil, biological staining		1750	.018		.50	.74	.14	1.38	1.83
1440	Heavy soil, biological and mineral staining, paint	↓	1000	.032		.67	1.30	.24	2.21	2.98
1800	For walnut shells, add					.82			.82	.90
1820	For corn chips, add					.82			.82	.90
2000	Steam cleaning, light soil	A-1H	750	.011			.39	.10	.49	.71
2020	Average soil, biological staining		625	.013			.47	.12	.59	.85
2040	Heavy soil, biological and mineral staining		375	.021			.78	.20	.98	1.43
4000	Add for masking doors and windows	1 Clob	800	.010		.04	.37		.41	.61
4200	Add for pedestrian protection				Job				10%	10%

04 01 30.60 Brick Washing

0010	BRICK WASHING	R040130-10								
0012	Acid cleanser, smooth brick surface	1 Bric	560	.014	S.F.	.06	.65		.71	1.06
0050	Rough brick		400	.020		.09	.91		1	1.49
0060	Stone, acid wash		600	.013		.10	.61		.71	1.04
1000	Muriatic acid, price per gallon in 5 gallon lots				Gal.	13			13	14.30

04 05 Common Work Results for Masonry

04 05 05 – Selective Masonry Demolition

04 05 05.10 Selective Demolition

0010	SELECTIVE DEMOLITION	R024119-10								
0200	Bond beams, 8" black with #4 bar	2 Clob	32	.500	L.F.		18.35		18.35	28.50
0300	Concrete block walls, unreinforced, 2" thick		1200	.013	S.F.		.49		.49	.75
0310	4" thick		1150	.014			.51		.51	.79
0320	6" thick		1100	.015			.53		.53	.82
0330	8" thick		1050	.015			.56		.56	.86
0340	10" thick		1000	.016			.59		.59	.90
0360	12" thick		950	.017			.62		.62	.95
0380	Reinforced alternate courses, 2" thick		1130	.014			.52		.52	.80
0390	4" thick		1080	.015			.54		.54	.84
0400	6" thick		1035	.015			.57		.57	.87
0410	8" thick		990	.016			.59		.59	.91
0420	10" thick		940	.017			.62		.62	.96
0430	12" thick		890	.018			.66		.66	1.02
0440	Reinforced alternate courses & vertically 48" OC, 4" thick		900	.018			.65		.65	1.01
0450	6" thick		850	.019			.69		.69	1.06
0460	8" thick		800	.020			.73		.73	1.13
0480	10" thick		750	.021			.78		.78	1.21
0490	12" thick		700	.023			.84		.84	1.29
1000	Chimney, 16" x 16", soft old mortar	1 Clob	55	.145	C.F.		5.35		5.35	8.25

04 05 Common Work Results for Masonry

04 05 05 – Selective Masonry Demolition

04 05 05.10 Selective Demolition		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1020	Hord mortar	1 Clob	40	.200	C.F.		7.35		7.35	11.30
1030	16" x 20", soft old mortar		55	.145			5.35		5.35	8.25
1040	Hord mortar		40	.200			7.35		7.35	11.30
1050	16" x 24", soft old mortar		55	.145			5.35		5.35	8.25
1060	Hord mortar		40	.200			7.35		7.35	11.30
1080	20" x 20", soft old mortar		55	.145			5.35		5.35	8.25
1100	Hord mortar		40	.200			7.35		7.35	11.30
1110	20" x 24", soft old mortar		55	.145			5.35		5.35	8.25
1120	Hord mortar		40	.200			7.35		7.35	11.30
1140	20" x 32", soft old mortar		55	.145			5.35		5.35	8.25
1160	Hord mortar		40	.200			7.35		7.35	11.30
1200	48" x 48", soft old mortar		55	.145			5.35		5.35	8.25
1220	Hord mortar		40	.200			7.35		7.35	11.30
1250	Metol, high temp steel jacket, 24" diameter	E-2	130	.431	V.L.F.		21.50	11.75	33.25	49.50
1260	60" diameter	"	60	.933			47	25.50	72.50	108
1280	Flue lining, up to 12" x 12"	1 Clob	200	.040			1.47		1.47	2.26
1282	Up to 24" x 24"		150	.053			1.95		1.95	3.02
2000	Columns, 8" x 8", soft old mortar		48	.167			6.10		6.10	9.45
2020	Hord mortar		40	.200			7.35		7.35	11.30
2060	16" x 16", soft old mortar		16	.500			18.35		18.35	28.50
2100	Hord mortar		14	.571			21		21	32.50
2140	24" x 24", soft old mortar		8	1			36.50		36.50	56.50
2160	Hord mortar		6	1.333			49		49	75.50
2200	36" x 36", soft old mortar		4	2			73.50		73.50	113
2220	Hord mortar		3	2.667			97.50		97.50	151
2230	Alternote pricing method, soft old mortar		30	.267	C.F.		9.75		9.75	15.10
2240	Hord mortar		23	.348	"		12.75		12.75	19.65
3000	Copings, precast or masonry, to 8" wide									
3020	Soft old mortar	1 Clob	180	.044	L.F.		1.63		1.63	2.51
3040	Hord mortar	"	160	.050	"		1.83		1.83	2.83
3100	To 12" wide									
3120	Soft old mortar	1 Clob	160	.050	L.F.		1.83		1.83	2.83
3140	Hord mortar	"	140	.057	"		2.09		2.09	3.23
4000	Fireplove, brick, 30" x 24" opening									
4020	Soft old mortar	1 Clob	2	4	Eo.		147		147	226
4040	Hord mortar		1.25	6.400			235		235	360
4100	Stone, soft old mortar		1.50	5.333			195		195	300
4120	Hord mortar		1	8			293		293	450
5000	Veneers, brick, soft old mortar		140	.057	S.F.		2.09		2.09	3.23
5020	Hord mortar		125	.064			2.35		2.35	3.62
5050	Gloss block, up to 4" thick		500	.016			.59		.59	.90
5100	Gronite ond morble, 2" thick		180	.044			1.63		1.63	2.51
5120	4" thick		170	.047			1.72		1.72	2.66
5140	Stone, 4" thick		180	.044			1.63		1.63	2.51
5160	8" thick		175	.046			1.68		1.68	2.58
5400	Alternote pricing method, stone, 4" thick		60	.133	C.F.		4.89		4.89	7.55
5420	8" thick		85	.094	"		3.45		3.45	5.30

04 05 13 – Masonry Mortaring

04 05 13.10 Cement

0010 CEMENT									
0100	Mosonry, 70 lb. bog, T.L. lots			Bog	11.05			11.05	12.15
0150	L.T.L. lots				11.70			11.70	12.90

04 05 Common Work Results for Masonry

04 05 13 – Masonry Mortaring

		Daily	Labor-			2014 Bare Costs			Total
04 05 13.10 Cement		Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
0200	White, 70 lb. bag, T.L. lots				Bog	15.65			15.65
0250	L.T.L. lots				▼	18.30			18.30

04 05 13.20 Lime

0010	LIME								
0020	Mosons, hydrated, 50 lb. bag, T.L. lots				Bog	10.10			10.10
0050	L.T.L. lots					11.10			11.10
0200	Finish, dauble hydrated, 50 lb. bag, T.L. lots					8.65			8.65
0250	L.T.L. lots				▼	9.55			9.55

04 05 13.23 Surface Bonding Masonry Mortaring

0010	SURFACE BONDING MASONRY MORTARING								
0020	Gray or white colors, not incl. block work	1 Bric	540	.015	S.F.	.13	.68		.81

04 05 13.30 Mortar

0010	MORTAR	R040513-10							
0020	With mosonry cement								
0100	Type M, 1:1:6 mix	1 Brhe	143	.056	C.F.	4.91	2.07		6.98
0200	Type N, 1:3 mix		143	.056		4.94	2.07		7.01
0300	Type O, 1:3 mix		143	.056		4.78	2.07		6.85
0400	Type PM, 1:1:6 mix, 2500 psi		143	.056		3.99	2.07		6.06
0500	Type S, 1/2:1:4 mix	▼	143	.056	▼	5.35	2.07		7.42
2000	With portland cement ond lime								
2100	Type M, 1:1/4:3 mix	1 Brhe	143	.056	C.F.	8.45	2.07		10.52
2200	Type N, 1:1:6 mix, 750 psi		143	.056		6.60	2.07		8.67
2300	Type O, 1:2:9 mix (Pointing Mortar)		143	.056		7	2.07		9.07
2400	Type PL, 1:1/2:4 mix, 2500 psi		143	.056		3.99	2.07		6.06
2600	Type S, 1:1/2:4 mix, 1800 psi	▼	143	.056		7.75	2.07		9.82
2650	Pre-mixed, type S or N					5.05			5.05
2700	Mortar for gloss block	1 Brhe	143	.056	▼	10.40	2.07		12.47
2900	Mortar far fire brick, dry mix, 10 lb. pail				Ea.	26			26

04 05 13.91 Masonry Restoration Mortaring

0010	MASONRY RESTORATION MORTARING								
0020	Masonry restorotian mix				Lb.	.23			.23
0050	White				"	.23			.23

04 05 13.93 Mortar Pigments

0010	MORTAR PIGMENTS, 50 lb. bags (2 bags per M bricks)	R040513-10							
0020	Color admixture, range 2 to 10 lb. per bog of cement, light colors				Lb.	4.25			4.25
0050	Medium calars					6.20			6.20
0100	Dork colors				▼	12.90			12.90

04 05 13.95 Sand

0010	SAND, screened ond washed at pit								
0020	Far martar, per ton				Ton	17.40			17.40
0050	With 10 mile haul					32			32
0100	With 30 mile houl				▼	52			52
0200	Screened and washed, at the pit				C.Y.	24			24
0250	With 10 mile houl					44			44
0300	With 30 mile houl				▼	72			72

04 05 13.98 Mortar Admixtures

0010	MORTAR ADMIXTURES								
0020	Waterproofing admixture, per quort (1 qt. ta 2 bags of mosonry cement)				Qt.	3.50			3.50

04 05 Common Work Results for Masonry

04 05 16 – Masonry Grouting

04 05 16.30 Grouting		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	GROUTING									
0011	Bond beams & lintels, 8" deep, 6" thick, 0.15 C.F. per L.F.	D-4	1480	.022	L.F.	.66	.90	.09	1.65	2.19
0020	8" thick, 0.2 C.F. per L.F.		1400	.023		1.04	.95	.10	2.09	2.70
0050	10" thick, 0.25 C.F. per L.F.		1200	.027		1.09	1.11	.11	2.31	3.01
0060	12" thick, 0.3 C.F. per L.F.	↓	1040	.031	↓	1.31	1.28	.13	2.72	3.53
0200	Concrete block cores, solid, 4" thk., by hand, 0.067 C.F./S.F. of wall	D-8	1100	.036	S.F.	.29	1.53		1.82	2.66
0210	6" thick, pumped, 0.175 C.F. per S.F.	D-4	720	.044		.76	1.85	.19	2.80	3.87
0250	8" thick, pumped, 0.258 C.F. per S.F.		680	.047		1.13	1.96	.20	3.29	4.44
0300	10" thick, pumped, 0.340 C.F. per S.F.		660	.048		1.49	2.02	.20	3.71	4.92
0350	12" thick, pumped, 0.422 C.F. per S.F.		640	.050		1.84	2.08	.21	4.13	5.45
0500	Cavity walls, 2" space, pumped, 0.167 C.F./S.F. of wall		1700	.019		.73	.78	.08	1.59	2.08
0550	3" space, 0.250 C.F./S.F.		1200	.027		1.09	1.11	.11	2.31	3.01
0600	4" space, 0.333 C.F. per S.F.		1150	.028		1.46	1.16	.12	2.74	3.49
0700	6" space, 0.500 C.F. per S.F.		800	.040	↓	2.19	1.67	.17	4.03	5.15
0800	Door frames, 3' x 7' opening, 2.5 C.F. per opening		60	.533	Opng.	10.95	22	2.25	35.20	48.50
0850	6' x 7' opening, 3.5 C.F. per opening		45	.711	"	15.30	29.50	2.99	47.79	65
2000	Grout, C476, for band beams, lintels and CMU cores		350	.091	C.F.	4.37	3.81	.38	8.56	11.05

04 05 19 – Masonry Anchorage and Reinforcing

04 05 19.05 Anchor Bolts

0010	ANCHOR BOLTS									
0015	Installed in fresh grout in CMU band beams or filled cores, no templates									
0020	Hooked, with nut and washer, 1/2" diam., 8" long	1 Bric	132	.061	Ea.	1.49	2.76		4.25	5.85
0030	12" long		131	.061		1.66	2.78		4.44	6.05
0040	5/8" diameter, 8" long		129	.062		3.25	2.83		6.08	7.90
0050	12" long		127	.063		4	2.87		6.87	8.80
0060	3/4" diameter, 8" long		127	.063		4	2.87		6.87	8.80
0070	12" long	↓	125	.064	↓	5	2.92		7.92	9.95

04 05 19.16 Masonry Anchors

0010	MASONRY ANCHORS									
0020	For brick veneer, galv., corrugated, 7/8" x 7", 22 Go.	1 Bric	10.50	.762	C	13.45	34.50		47.95	68
0100	24 Go.		10.50	.762		9.50	34.50		44	63.50
0150	16 Go.		10.50	.762		26.50	34.50		61	82
0200	Buck anchors, galv., corrugated, 16 go., 2" bend, 8" x 2"		10.50	.762		49	34.50		83.50	107
0250	8" x 3"		10.50	.762		51	34.50		85.50	109
0660	Cavity wall, Z-type, galvanized, 6" long, 1/8" diam.		10.50	.762		23.50	34.50		58	79
0670	3/16" diameter		10.50	.762		27	34.50		61.50	82.50
0680	1/4" diameter		10.50	.762		40.50	34.50		75	97.50
0850	8" long, 3/16" diameter		10.50	.762		25	34.50		59.50	80.50
0855	1/4" diameter		10.50	.762		48.50	34.50		83	107
1000	Rectangular type, galvanized, 1/4" diameter, 2" x 6"		10.50	.762		70	34.50		104.50	130
1050	4" x 6"		10.50	.762		85	34.50		119.50	147
1100	3/16" diameter, 2" x 6"		10.50	.762		42	34.50		76.50	99.50
1150	4" x 6"		10.50	.762		48.50	34.50		83	106
1500	Rigid partition anchors, plain, 8" long, 1" x 1/8"		10.50	.762		235	34.50		269.50	310
1550	1" x 1/4"		10.50	.762		277	34.50		311.50	360
1580	1-1/2" x 1/8"		10.50	.762		259	34.50		293.50	340
1600	1-1/2" x 1/4"		10.50	.762		325	34.50		359.50	410
1650	2" x 1/8"		10.50	.762		305	34.50		339.50	390
1700	2" x 1/4"	↓	10.50	.762	↓	405	34.50		439.50	500

04 05 Common Work Results for Masonry

04 05 19 – Masonry Anchorage and Reinforcing

04 05 19.26 Masonry Reinforcing Bars				Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bore Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	MASONRY REINFORCING BARS											
			R040519-50									
0015	Steel bars A615, placed horiz., #3 & #4 bars			1 Bric	450	.018	Lb.	.50	.81		1.31	1.79
0020	#5 & #6 bars				800	.010		.50	.46		.96	1.25
0050	Placed vertical, #3 & #4 bars				350	.023		.50	1.04		1.54	2.14
0060	#5 & #6 bars				650	.012	▼	.50	.56		1.06	1.41
0200	Joint reinforcing, regular truss, to 6" wide, mill std galvanized				30	.267	C.L.F.	21	12.15		33.15	41.50
0250	12" wide				20	.400		24.50	18.25		42.75	55
0400	Cavity truss with drip section, to 6" wide				30	.267		22.50	12.15		34.65	43
0450	12" wide				20	.400	▼	26	18.25		44.25	56.50

04 05 23 – Masonry Accessories

04 05 23.13 Masonry Control and Expansion Joints

0010	MASONRY CONTROL AND EXPANSION JOINTS											
0020	Rubber, for double wythe 8" minimum wall (Brick/CMU)			1 Bric	400	.020	L.F.	1.77	.91		2.68	3.34
0025	"T" shaped				320	.025		1.16	1.14		2.30	3.02
0030	Cross-shaped for CMU units				280	.029		1.42	1.30		2.72	3.55
0050	PVC, for double wythe 8" minimum wall (Brick/CMU)				400	.020		1.27	.91		2.18	2.79
0120	"T" shaped				320	.025		.73	1.14		1.87	2.54
0160	Cross-shaped for CMU units			▼	280	.029	▼	.92	1.30		2.22	3

04 05 23.19 Masonry Cavity Drainage, Weepholes, and Vents

0010	MASONRY CAVITY DRAINAGE, WEEPHOLES, AND VENTS											
0020	Extruded aluminum, 4" deep, 2-3/8" x 8-1/8"			1 Bric	30	.267	Ea.	31.50	12.15		43.65	53
0050	5" x 8-1/8"				25	.320		41	14.60		55.60	67.50
0100	2-1/4" x 25"				25	.320		71.50	14.60		86.10	101
0150	5" x 16-1/2"				22	.364		62.50	16.60		79.10	94
0175	5" x 24"				22	.364		77.50	16.60		94.10	111
0200	6" x 16-1/2"				22	.364		83.50	16.60		100.10	118
0250	7-3/4" x 16-1/2"			▼	20	.400		71	18.25		89.25	107
0400	Far baked enamel finish, odd							35%				
0500	Far cost aluminum, pointed, odd							60%				
1000	Stainless steel ventilators, 6" x 6"			1 Bric	25	.320		188	14.60		202.60	228
1050	8" x 8"				24	.333		208	15.20		223.20	251
1100	12" x 12"				23	.348		228	15.85		243.85	274
1150	12" x 6"				24	.333		228	15.20		243.20	273
1200	Foundation block vent, galv., 1-1/4" thk, 8" high, 16" long, no damper			▼	30	.267		16.20	12.15		28.35	36.50
1250	Far damper, add						▼	3.11			3.11	3.42

04 05 23.95 Wall Plugs

0010	WALL PLUGS (far nailing to brickwork)											
0020	25 ga., galvanized, plain			1 Bric	10.50	.762	C	26.50	34.50		61	82
0050	Wood filled			"	10.50	.762	"	63.50	34.50		98	123

04 21 Clay Unit Masonry

04 21 13 – Brick Masonry

04 21 13.13 Brick Veneer Masonry				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	BRICK VENEER MASONRY, T.L. lots, excl. scaff., grout & reinforcing R042110-20											
0015	Material costs incl. 3% brick and 25% mortar waste											
0020	Standard, select common, 4" x 2-2/3" x 8" (6.75/S.F.)			D-8	1.50	26.667	M	655	1,125		1,780	2,450
0050	Red, 4" x 2-2/3" x 8", running bond				1.50	26.667		595	1,125		1,720	2,375
0100	Full header every 6th course (7.88/S.F.) R042110-50				1.45	27.586		590	1,175		1,765	2,425
0150	English, full header every 2nd course (10.13/S.F.)				1.40	28.571		590	1,200		1,790	2,475
0200	Flemish, alternote header every course (9.00/S.F.)				1.40	28.571		590	1,200		1,790	2,475
0250	Flemish, alt. header every 6th course (7.13/S.F.)				1.45	27.586		590	1,175		1,765	2,425
0300	Full headers throughout (13.50/S.F.)				1.40	28.571		590	1,200		1,790	2,475
0350	Rowlock course (13.50/S.F.)				1.35	29.630		590	1,250		1,840	2,550
0400	Rowlock stretcher (4.50/S.F.)				1.40	28.571		600	1,200		1,800	2,475
0450	Soldier course (6.75/S.F.)				1.40	28.571		595	1,200		1,795	2,475
0500	Soldier course (4.50/S.F.)				1.30	30.769		600	1,300		1,900	2,625
0601	Buff or gray face, running bond, (6.75/S.F.)				1.50	26.667		595	1,125		1,720	2,375
0700	Glozed face, 4" x 2-2/3" x 8", running bond				1.40	28.571		1,775	1,200		2,975	3,775
0750	Full header every 6th course (7.88/S.F.)				1.35	29.630		1,700	1,250		2,950	3,750
1000	Jumbo, 6" x 4" x 12", (3.00/S.F.)				1.30	30.769		1,650	1,300		2,950	3,800
1051	Normon, 4" x 2-2/3" x 12" (4.50/S.F.)				1.45	27.586		1,150	1,175		2,325	3,050
1100	Norwegian, 4" x 3-1/5" x 12" (3.75/S.F.)				1.40	28.571		1,275	1,200		2,475	3,225
1150	Economy, 4" x 4" x 8" (4.50 per S.F.)				1.40	28.571		885	1,200		2,085	2,800
1201	Engineer, 4" x 3-1/5" x 8", (5.63/S.F.)				1.45	27.586		620	1,175		1,795	2,450
1251	Romon, 4" x 2" x 12", (6.00/S.F.)				1.50	26.667		1,300	1,125		2,425	3,175
1300	S.C.R. 6" x 2-2/3" x 12" (4.50/S.F.)				1.40	28.571		1,450	1,200		2,650	3,425
1350	Utility, 4" x 4" x 12" (3.00/S.F.)			▼	1.08	37.037		1,550	1,550		3,100	4,100
1360	For less than truck load lots, odd							15%				
1400	For battered walls, odd								30%			
1450	For corbels, odd								75%			
1500	For curved walls, odd								30%			
1550	For pits and trenches, deduct								20%			
1999	Alternote method of figuring by square foot											
2000	Standard, sel. common, 4" x 2-2/3" x 8", (6.75/S.F.)			D-8	230	.174	S.F.	4.43	7.35		11.78	16.10
2020	Red, 4" x 2-2/3" x 8", running bond				220	.182		4	7.65		11.65	16.10
2050	Full header every 6th course (7.88/S.F.)				185	.216		4.66	9.10		13.76	19
2100	English, full header every 2nd course (10.13/S.F.)				140	.286		5.95	12.05		18	25
2150	Flemish, alternote header every course (9.00/S.F.)				150	.267		5.30	11.25		16.55	23
2200	Flemish, alt. header every 6th course (7.13/S.F.)				205	.195		4.22	8.25		12.47	17.20
2250	Full headers throughout (13.50/S.F.)				105	.381		7.95	16.05		24	33.50
2300	Rowlock course (13.50/S.F.)				100	.400		7.95	16.85		24.80	34.50
2350	Rowlock stretcher (4.50/S.F.)				310	.129		2.69	5.45		8.14	11.25
2400	Soldier course (6.75/S.F.)				200	.200		4	8.45		12.45	17.25
2450	Soldier course (4.50/S.F.)				290	.138		2.69	5.80		8.49	11.80
2600	Buff or gray face, running bond, (6.75/S.F.)				220	.182		4.23	7.65		11.88	16.35
2700	Glozed face brick, running bond				210	.190		11.40	8.05		19.45	25
2750	Full header every 6th course (7.88/S.F.)				170	.235		13.30	9.90		23.20	30
3000	Jumbo, 6" x 4" x 12" running bond (3.00/S.F.)				435	.092		4.51	3.88		8.39	10.85
3050	Normon, 4" x 2-2/3" x 12" running bond, (4.5/S.F.)				320	.125		5.80	5.25		11.05	14.45
3100	Norwegian, 4" x 3-1/5" x 12" (3.75/S.F.)				375	.107		4.66	4.50		9.16	11.95
3150	Economy, 4" x 4" x 8" (4.50/S.F.)				310	.129		3.95	5.45		9.40	12.65
3200	Engineer, 4" x 3-1/5" x 8" (5.63/S.F.)				260	.154		3.48	6.50		9.98	13.75
3250	Romon, 4" x 2" x 12" (6.00/S.F.)				250	.160		7.70	6.75		14.45	18.80
3300	SCR, 6" x 2-2/3" x 12" (4.50/S.F.)				310	.129		6.55	5.45		12	15.50
3350	Utility, 4" x 4" x 12" (3.00/S.F.)			▼	360	.111	▼	4.56	4.68		9.24	12.15
3360	For less than truck load lots, odd						M	15%				

04 21 Clay Unit Masonry

04 21 13 – Brick Masonry

04 21 13.13 Brick Veneer Masonry		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3370	For bottered walls, add						30%			
3380	For corbels, add						75%			
3400	For covity woll construction, add						15%			
3450	For stocked bond, add						10%			
3500	For interior veneer construction, add						15%			
3510	For pits and trenches, deduct						20%			
3550	For curved walls, add						30%			

04 21 13.14 Thin Brick Veneer

0010	THIN BRICK VENEER									
0015	Material costs incl. 3% brick ond 25% mortor waste									
0020	On & incl. metol ponel support sys, modular, 2-2/3" x 5/8" x 8", red	D-7	92	.174	S.F.	8.75	6.55		15.30	19.30
0100	Closure, 4" x 5/8" x 8"		110	.145		8.75	5.45		14.20	17.70
0110	Normon, 2-2/3" x 5/8" x 12"		110	.145		8.95	5.45		14.40	17.90
0120	Utility, 4" x 5/8" x 12"		125	.128		8.95	4.81		13.76	16.95
0130	Emperor, 4" x 3/4" x 16"		175	.091		10.15	3.44		13.59	16.25
0140	Super emperor, 8" x 3/4" x 16"	▼	195	.082	▼	10.15	3.09		13.24	15.75
0150	For L shoped corners with 4" return, odd				L.F.	9.25			9.25	10.20
0200	On mosonry/plaster bock-up, modular, 2-2/3" x 5/8" x 8", red	D-7	137	.117	S.F.	3.95	4.39		8.34	10.80
0210	Closure, 4" x 5/8" x 8"		165	.097		3.95	3.65		7.60	9.75
0220	Normon, 2-2/3" x 5/8" x 12"		165	.097		4.15	3.65		7.80	9.95
0230	Utility, 4" x 5/8" x 12"		185	.086		4.15	3.25		7.40	9.35
0240	Emperor, 4" x 3/4" x 16"		260	.062		5.35	2.31		7.66	9.30
0250	Super emperor, 8" x 3/4" x 16"	▼	285	.056	▼	5.35	2.11		7.46	9
0260	For L shoped corners with 4" return, odd				L.F.	9.25			9.25	10.20
0270	For embedment into pre-cast concrete ponels, odd				S.F.	14.40			14.40	15.85

04 21 13.15 Chimney

0010	CHIMNEY , excludes foundation, scaffolding, grout ond reinforcing									
0100	Brick, 16" x 16", 8" flue	D-1	18.20	.879	V.L.F.	25	36.50		61.50	83
0150	16" x 20" with one 8" x 12" flue		16	1		38.50	41.50		80	106
0200	16" x 24" with two 8" x 8" flues		14	1.143		55.50	47		102.50	133
0250	20" x 20" with one 12" x 12" flue		13.70	1.168		50	48		98	128
0300	20" x 24" with two 8" x 12" flues		12	1.333		63	55		118	153
0350	20" x 32" with two 12" x 12" flues	▼	10	1.600	▼	87.50	66		153.50	198

04 21 13.18 Columns

0010	COLUMNS , solid, excludes scaffolding, grout ond reinforcing									
0050	Brick, 8" x 8", 9 brick per V.L.F.	D-1	56	.286	V.L.F.	5.20	11.80		17	23.50
0100	12" x 8", 13.5 brick per V.L.F.		37	.432		7.80	17.85		25.65	35.50
0200	12" x 12", 20 brick per V.L.F.		25	.640		11.55	26.50		38.05	53
0300	16" x 12", 27 brick per V.L.F.		19	.842		15.60	35		50.60	70
0400	16" x 16", 36 brick per V.L.F.		14	1.143		21	47		68	95
0500	20" x 16", 45 brick per V.L.F.		11	1.455		26	60		86	120
0600	20" x 20", 56 brick per V.L.F.		9	1.778		32.50	73.50		106	148
0700	24" x 20", 68 brick per V.L.F.		7	2.286		39	94.50		133.50	187
0800	24" x 24", 81 brick per V.L.F.		6	2.667		46.50	110		156.50	220
1000	36" x 36", 182 brick per V.L.F.		3	5.333		105	220		325	450

04 21 13.30 Oversized Brick

0010	OVERSIZED BRICK , excludes scaffolding, grout ond reinforcing									
0100	Veneer, 4" x 2.25" x 16"	D-8	387	.103	S.F.	5.05	4.36		9.41	12.20
0105	4" x 2.75" x 16"		412	.097		5.25	4.09		9.34	12.05
0110	4" x 4" x 16"		460	.087		5.90	3.67		9.57	12.10
0120	4" x 8" x 16"		533	.075		6	3.16		9.16	11.40
0125	Loodbearing, 6" x 4" x 16", grouted ond reinforced	▼	387	.103	▼	14.10	4.36		18.46	22

04 21 Clay Unit Masonry

04 21 13 – Brick Masonry

04 21 13.30 Oversized Brick

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0130	8" x 4" x 16", grouted and reinforced	D-8	327	.122	S.F.	14.95	5.15		20.10	24.50
0135	6" x 8" x 16", grouted and reinforced		440	.091		13.40	3.83		17.23	20.50
0140	8" x 8" x 16", grouted and reinforced		400	.100		14.65	4.22		18.87	22.50
0145	Curtainwall/reinforced veneer, 6" x 4" x 16"		387	.103		18.35	4.36		22.71	26.50
0150	8" x 4" x 16"		327	.122		21.50	5.15		26.65	31.50
0155	6" x 8" x 16"		440	.091		18.15	3.83		21.98	26
0160	8" x 8" x 16"		400	.100		26	4.22		30.22	35
0200	For 1 to 3 slots in face, add					15%				
0210	For 4 to 7 slots in face, add					25%				
0220	For band beams, add					20%				
0230	For bullnose shapes, add					20%				
0240	For open end knockout, add					10%				
0250	For white or gray color group, add					10%				
0260	For 135 degree corner, add					250%				

04 21 13.35 Common Building Brick

0010	COMMON BUILDING BRICK, C62, TL lots, material only	R042110-20								
0020	Standard				M	490			490	540
0050	Select				"	550			550	605

04 21 13.40 Structural Brick

0010	STRUCTURAL BRICK C652, Grade SW, incl. mortar, scaffolding not incl.									
0100	Standard unit, 4-5/8" x 2-3/4" x 9-5/8"	D-8	245	.163	S.F.	4.51	6.90		11.41	15.45
0120	Band beam		225	.178		7	7.50		14.50	19.10
0140	V cut band beam		225	.178		7.60	7.50		15.10	19.75
0160	Stretcher quoin, 5-5/8" x 2-3/4" x 9-5/8"		245	.163		7.40	6.90		14.30	18.65
0180	Corner quoin		245	.163		8.20	6.90		15.10	19.55
0200	Corner, 45 deg, 4-5/8" x 2-3/4" x 10-7/16"		235	.170		8.45	7.20		15.65	20.50

04 21 13.45 Face Brick

0010	FACE BRICK Material Only, C216, TL lots	R042110-20								
0300	Standard modular, 4" x 2-2/3" x 8", minimum				M	490			490	540
0350	Maximum					695			695	760
0450	Economy, 4" x 4" x 8", minimum					765			765	840
0500	Maximum					990			990	1,100
0510	Economy, 4" x 4" x 12", minimum					1,200			1,200	1,325
0520	Maximum					1,575			1,575	1,725
0550	Jumbo, 6" x 4" x 12", minimum					1,375			1,375	1,500
0600	Maximum					1,825			1,825	2,000
0610	Jumbo, 8" x 4" x 12", minimum					1,375			1,375	1,500
0620	Maximum					1,825			1,825	2,000
0650	Norwegian, 4" x 3-1/5" x 12", minimum					1,125			1,125	1,225
0700	Maximum					1,450			1,450	1,600
0710	Norwegian, 6" x 3-1/5" x 12", minimum					1,475			1,475	1,600
0720	Maximum					1,900			1,900	2,100
0850	Standard glazed, plain colors, 4" x 2-2/3" x 8", minimum					1,550			1,550	1,725
0900	Maximum					2,025			2,025	2,225
1000	Deep trim shades, 4" x 2-2/3" x 8", minimum					1,975			1,975	2,150
1050	Maximum					2,200			2,200	2,425
1080	Jumbo utility, 4" x 4" x 12"					1,375			1,375	1,525
1120	4" x 8" x 8"					1,725			1,725	1,875
1140	4" x 8" x 16"					5,050			5,050	5,550
1260	Engineer, 4" x 3-1/5" x 8", minimum					515			515	565
1270	Maximum					715			715	785
1350	King, 4" x 2-3/4" x 10", minimum					465			465	515

04 21 Clay Unit Masonry

04 21 13 – Brick Masonry

04 21 13.45 Face Brick		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1360	Maximum				M	575			575	630
1770	Standard modular, double glazed, 4" x 2-2/3" x 8"					2,325			2,325	2,550
1850	Jumbo, colored glazed ceramic, 6" x 4" x 12"					2,450			2,450	2,700
2050	Jumbo utility, glazed, 4" x 4" x 12"					4,600			4,600	5,050
2100	4" x 8" x 8"					5,400			5,400	5,950
2150	4" x 16" x 8"					6,325			6,325	6,950
2170	For less than truck load lots, add					15			15	16.50
2180	For buff or gray brick, add					16			16	17.60

04 21 26 – Glazed Structural Clay Tile Masonry

04 21 26.10 Structural Facing Tile

0010	STRUCTURAL FACING TILE, std. colors, excl. scaffolding, grout, reinforcing									
0020	6T series, 5-1/3" x 12", 2.3 pieces per S.F., glazed 1 side, 2" thick	D-8	225	.178	S.F.	8.80	7.50		16.30	21
0100	4" thick		220	.182		11.95	7.65		19.60	25
0150	Glazed 2 sides		195	.205		15.75	8.65		24.40	30.50
0250	6" thick		210	.190		17.85	8.05		25.90	32
0300	Glazed 2 sides		185	.216		21	9.10		30.10	37.50
0400	8" thick		180	.222	▼	23.50	9.35		32.85	40.50
0500	Special shapes, group 1		400	.100	Eq.	7.55	4.22		11.77	14.75
0550	Group 2		375	.107		12.25	4.50		16.75	20.50
0600	Group 3		350	.114		15.75	4.82		20.57	24.50
0650	Group 4		325	.123		32.50	5.20		37.70	44
0700	Group 5		300	.133		39	5.60		44.60	51.50
0750	Group 6		275	.145	▼	53	6.15		59.15	67.50
1000	Fire rated, 4" thick, 1 hr. rating		210	.190	S.F.	17.05	8.05		25.10	31
1300	Acoustic, 4" thick	▼	210	.190	"	34	8.05		42.05	50
2000	8W series, 8" x 16", 1.125 pieces per S.F.									
2050	2" thick, glazed 1 side	D-8	360	.111	S.F.	10.25	4.68		14.93	18.40
2100	4" thick, glazed 1 side		345	.116		14.10	4.89		18.99	23
2150	Glazed 2 sides		325	.123		16.95	5.20		22.15	26.50
2200	6" thick, glazed 1 side		330	.121		24	5.10		29.10	34.50
2250	8" thick, glazed 1 side		310	.129	▼	24	5.45		29.45	35
2500	Special shapes, group 1		300	.133	Eq.	14.60	5.60		20.20	24.50
2550	Group 2		280	.143		19.50	6		25.50	30.50
2600	Group 3		260	.154		20.50	6.50		27	33
2650	Group 4		250	.160		43	6.75		49.75	57.50
2700	Group 5		240	.167		38.50	7.05		45.55	52.50
2750	Group 6		230	.174		83	7.35		90.35	102
3000	4" thick, glazed 1 side		345	.116	S.F.	13.75	4.89		18.64	22.50
3100	Acoustic, 4" thick	▼	345	.116	"	18	4.89		22.89	27.50
3120	4W series, 8" x 8", 2.25 pieces per S.F.									
3125	2" thick, glazed 1 side	D-8	360	.111	S.F.	9.45	4.68		14.13	17.55
3130	4" thick, glazed 1 side		345	.116		11.15	4.89		16.04	19.70
3135	Glazed 2 sides		325	.123		15.35	5.20		20.55	25
3140	6" thick, glazed 1 side		330	.121		15.85	5.10		20.95	25
3150	8" thick, glazed 1 side		310	.129	▼	23	5.45		28.45	34
3155	Special shapes, group 1		300	.133	Eq.	7.40	5.60		13	16.70
3160	Group 2	▼	280	.143	"	8.55	6		14.55	18.60
3200	For designer colors, add					25%				
3300	For epoxy mortar joints, add				S.F.	1.69			1.69	1.86

04 21 Clay Unit Masonry

04 21 29 – Terra Cotta Masonry

04 21 29.10 Terra Cotta Masonry Components				Daily Crew Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	TERRA COTTA MASONRY COMPONENTS										
0020	Coping, split type, nat glazed, 9" wide	D-1	90	.178	L.F.	13.15	7.35	20.50	25.50		
0100	13" wide		80	.200		18.35	8.25	26.60	32.50		
0200	Coping, split type, glozed, 9" wide		90	.178		11.70	7.35	19.05	24		
0250	13" wide	↓	80	.200	↓	15.45	8.25	23.70	29.50		
0500	Portition or back-up blocks, scored, in C.L. lots										
0700	Non-load bearing 12" x 12", 3" thick, special order	D-8	550	.073	S.F.	16.85	3.07	19.92	23		
0750	4" thick, standord		500	.080		5.35	3.37	8.72	11		
0800	6" thick		450	.089		7.20	3.75	10.95	13.60		
0850	8" thick		400	.100		9.05	4.22	13.27	16.40		
1000	Load bearing, 12" x 12", 4" thick, in wolls		500	.080		5.45	3.37	8.82	11.15		
1050	In floors		750	.053		5.45	2.25	7.70	9.45		
1200	6" thick, in wolls		450	.089		7.35	3.75	11.10	13.80		
1250	In floors		675	.059		7.35	2.50	9.85	11.90		
1400	8" thick, in wolls		400	.100		9.15	4.22	13.37	16.50		
1450	In floors		575	.070		9.15	2.93	12.08	14.50		
1600	10" thick, in walls, special order		350	.114		23	4.82	27.82	33		
1650	In floors, special order		500	.080		23	3.37	26.37	30.50		
1800	12" thick, in walls, special order		300	.133		23	5.60	28.60	34		
1850	In floors, special order	↓	450	.089		23	3.75	26.75	31		
2000	For reinforcing with steel rads, odd ta above					15%	5%				
2100	For smooth tile instead af scored, odd					3.66		3.66	4.03		
2200	Far L.C.L. quantities, odd				↓	10%	10%				

04 21 29.20 Terra Cotta Tile

0010	TERRA COTTA TILE , on wolls, dry set, 1/2" thick										
0100	Square, hexagonal or lattice shopes, unglazed	1 Tilt	135	.059	S.F.	4.62	2.49	7.11	8.75		
0300	Glozed, plain calars		130	.062		7.10	2.58	9.68	11.60		
0400	Intense calars	↓	125	.064	↓	8.30	2.68	10.98	13.10		

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.11 Autoclave Aerated Concrete Block

0010	AUTOCCLAVE AERATED CONCRETE BLOCK , excl. scaffolding, grout & reinforcing										
0050	Solid, 4" x 8" x 24", incl. mortor	G	D-8	600	.067	S.F.	1.48	2.81	4.29	5.90	
0060	6" x 8" x 24"	G		600	.067		2.23	2.81	5.04	6.75	
0070	8" x 8" x 24"	G		575	.070		2.97	2.93	5.90	7.75	
0080	10" x 8" x 24"	G		575	.070		3.63	2.93	6.56	8.45	
0090	12" x 8" x 24"	G	↓	550	.073	↓	4.45	3.07	7.52	9.55	

04 22 10.12 Chimney Block

0010	CHIMNEY BLOCK , excludes scaffolding, grout ond reinforcing										
0220	1 piece, with 8" x 8" flue, 16" x 16"	D-1	28	.571	V.L.F.	18.20	23.50	41.70	56		
0230	2 piece, 16" x 16"		26	.615		22	25.50	47.50	62.50		
0240	2 piece, with 8" x 12" flue, 16" x 20"	↓	24	.667	↓	31	27.50	58.50	76		

04 22 10.14 Concrete Block, Back-Up

0010	CONCRETE BLOCK, BACK-UP , C90, 2000 psi	R042210-20									
0020	Normal weight, 8" x 16" units, tooled joint 1 side										
0050	Not-reinforced, 2000 psi, 2" thick	D-8	475	.084	S.F.	1.40	3.55	4.95	6.95		
0200	4" thick		460	.087		1.66	3.67	5.33	7.45		
0300	6" thick		440	.091		2.18	3.83	6.01	8.25		
0350	8" thick	↓	400	.100	↓	2.45	4.22	6.67	9.15		

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
04 22 10.14 Concrete Block, Back-Up							Labor	Equipment		
0400	10" thick	D-8	330	.121	S.F.	2.95	5.10		8.05	11.05
0450	12" thick	D-9	310	.155		3.76	6.40		10.16	13.90
1000	Reinforced, alternate courses, 4" thick	D-8	450	.089		1.82	3.75		5.57	7.70
1100	6" thick		430	.093		2.34	3.92		6.26	8.55
1150	8" thick		395	.101		2.62	4.27		6.89	9.40
1200	10" thick		320	.125		3.10	5.25		8.35	11.45
1250	12" thick	D-9	300	.160	▼	3.92	6.60		10.52	14.35
04 22 10.16 Concrete Block, Bond Beam										
0010	CONCRETE BLOCK, BOND BEAM, C90, 2000 psi									
0020	Not including grout or reinforcing									
0125	Regular block, 6" thick	D-8	584	.068	L.F.	2.25	2.89		5.14	6.90
0130	8" high, 8" thick	"	565	.071		2.63	2.98		5.61	7.45
0150	12" thick	D-9	510	.094		3.91	3.89		7.80	10.20
0525	Lightweight, 6" thick	D-8	592	.068		2.67	2.85		5.52	7.30
0530	8" high, 8" thick	"	575	.070		3.22	2.93		6.15	8
0550	12" thick	D-9	520	.092	▼	4.33	3.81		8.14	10.55
2000	Including grout and 2 #5 bars									
2100	Regular block, 8" high, 8" thick	D-8	300	.133	L.F.	4.72	5.60		10.32	13.75
2150	12" thick	D-9	250	.192		6.55	7.95		14.50	19.30
2500	Lightweight, 8" high, 8" thick	D-8	305	.131		5.30	5.55		10.85	14.30
2550	12" thick	D-9	255	.188	▼	7	7.75		14.75	19.55
04 22 10.18 Concrete Block, Column										
0010	CONCRETE BLOCK, COLUMN or pilaster									
0050	Including vertical reinforcing (4-#4 bars) and grout									
0160	1 piece unit, 16" x 16"	D-1	26	.615	V.L.F.	15.85	25.50		41.35	56
0170	2 piece units, 16" x 20"		24	.667		20.50	27.50		48	64.50
0180	20" x 20"		22	.727		26	30		56	74.50
0190	22" x 24"		18	.889		38.50	36.50		75	98.50
0200	20" x 32"	▼	14	1.143	▼	45	47		92	122
04 22 10.19 Concrete Block, Insulation Inserts										
0010	CONCRETE BLOCK, INSULATION INSERTS									
0100	Styrofoam, plant installed, add to block prices									
0200	8" x 16" units, 6" thick				S.F.	1.20			1.20	1.32
0250	8" thick					1.35			1.35	1.49
0300	10" thick					1.50			1.50	1.65
0350	12" thick					1.65			1.65	1.82
0500	8" x 8" units, 8" thick					1.20			1.20	1.32
0550	12" thick				▼	1.20			1.20	1.32
04 22 10.23 Concrete Block, Decorative										
0010	CONCRETE BLOCK, DECORATIVE, C90, 2000 psi									
0020	Embossed, simulated brick face									
0100	8" x 16" units, 4" thick	D-8	400	.100	S.F.	2.73	4.22		6.95	9.45
0200	8" thick	▼	340	.118		3.92	4.96		8.88	11.85
0250	12" thick	▼	300	.133	▼	4.26	5.60		9.86	13.25
0400	Embossed both sides									
0500	8" thick	D-8	300	.133	S.F.	2.53	5.60		8.13	11.35
0550	12" thick	"	275	.145	"	3.67	6.15		9.82	13.40
1000	Fluted high strength									
1100	8" x 16" x 4" thick, flutes 1 side,	D-8	345	.116	S.F.	4.17	4.89		9.06	12.05
1150	Flutes 2 sides		335	.119		4.73	5.05		9.78	12.85
1200	8" thick	▼	300	.133		5	5.60		10.60	14.05
1250	For special colors, add				▼	.46			.46	.51

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.23 Concrete Block, Decorative		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1400	Deep grooved, smooth face									
1450	8" x 16" x 4" thick	D-8	345	.116	S.F.	2.59	4.89		7.48	10.30
1500	8" thick	"	300	.133	"	4.55	5.60		10.15	13.55
2000	Formblock, incl. inserts & reinforcing									
2100	8" x 16" x 8" thick	D-8	345	.116	S.F.	3.38	4.89		8.27	11.15
2150	12" thick	"	310	.129	"	4.42	5.45		9.87	13.15
2500	Ground face									
2600	8" x 16" x 4" thick	D-8	345	.116	S.F.	3.45	4.89		8.34	11.25
2650	6" thick		325	.123		3.86	5.20		9.06	12.15
2700	8" thick		300	.133		4.26	5.60		9.86	13.25
2750	12" thick	D-9	265	.181		5.40	7.50		12.90	17.35
2900	For special colors, odd, minimum					15%				
2950	For special colors, odd, maximum					45%				
4000	Slump block									
4100	4" face height x 16" x 4" thick	D-1	165	.097	S.F.	3.68	4		7.68	10.15
4150	6" thick		160	.100		5.30	4.13		9.43	12.15
4200	8" thick		155	.103		5.35	4.26		9.61	12.40
4250	10" thick		140	.114		10.50	4.72		15.22	18.75
4300	12" thick		130	.123		11.05	5.10		16.15	19.90
4400	6" face height x 16" x 6" thick		155	.103		5.05	4.26		9.31	12.10
4450	8" thick		150	.107		7.45	4.41		11.86	14.90
4500	10" thick		130	.123		11	5.10		16.10	19.85
4550	12" thick		120	.133		11.25	5.50		16.75	21
5000	Split rib profile units, 1" deep ribs, 8 ribs									
5100	8" x 16" x 4" thick	D-8	345	.116	S.F.	3.62	4.89		8.51	11.45
5150	6" thick		325	.123		4.17	5.20		9.37	12.50
5200	8" thick		300	.133		4.83	5.60		10.43	13.85
5250	12" thick	D-9	275	.175		5.65	7.20		12.85	17.20
5400	For special deeper colors, 4" thick, odd					1.23			1.23	1.35
5450	12" thick, odd					1.27			1.27	1.39
5600	For white, 4" thick, odd					1.23			1.23	1.35
5650	6" thick, odd					1.25			1.25	1.38
5700	8" thick, odd					1.28			1.28	1.40
5750	12" thick, odd					1.32			1.32	1.45
6000	Split face									
6100	8" x 16" x 4" thick	D-8	350	.114	S.F.	3.27	4.82		8.09	10.95
6150	6" thick		325	.123		3.79	5.20		8.99	12.05
6200	8" thick		300	.133		4.36	5.60		9.96	13.35
6250	12" thick	D-9	270	.178		5.25	7.35		12.60	16.95
6300	For scored, odd					.37			.37	.41
6400	For special deeper colors, 4" thick, odd					.59			.59	.65
6450	6" thick, odd					.70			.70	.77
6500	8" thick, odd					.72			.72	.80
6550	12" thick, odd					.75			.75	.82
6650	For white, 4" thick, odd					1.22			1.22	1.34
6700	6" thick, odd					1.23			1.23	1.35
6750	8" thick, odd					1.24			1.24	1.37
6800	12" thick, odd					1.27			1.27	1.39
7000	Scored ground face, 2 to 5 scores									
7100	8" x 16" x 4" thick	D-8	340	.118	S.F.	6.55	4.96		11.51	14.80
7150	6" thick		310	.129		7.30	5.45		12.75	16.35
7200	8" thick		290	.138		8.30	5.80		14.10	17.95
7250	12" thick	D-9	265	.181		12.55	7.50		20.05	25

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.23 Concrete Block, Decorative		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8000	Hexagonal face profile units, 8" x 16" units									
8100	4" thick, hollow	D-8	340	.118	S.F.	3.45	4.96		8.41	11.35
8200	Solid		340	.118		4.42	4.96		9.38	12.40
8300	6" thick, hollow		310	.129		3.72	5.45		9.17	12.40
8350	8" thick, hollow	▼	290	.138	▼	4.12	5.80		9.92	13.40
8500	For stocked bond, odd						26%			
8550	For high rise construction, odd per story	D-8	67.80	.590	M.S.F.		25		25	38
8600	For scored block, odd					10%				
8650	For honed or ground face, per face, odd				Eo.	.98			.98	1.08
8700	For honed or ground end, per end, odd				"	.98			.98	1.08
8750	For bullnose block, odd					10%				
8800	For special color, odd					13%				

04 22 10.24 Concrete Block, Exterior

0010	CONCRETE BLOCK, EXTERIOR, C90, 2000 psi									
0020	Reinforced olt courses, tooled joints 2 sides									
0100	Normal weight, 8" x 16" x 6" thick	D-8	395	.101	S.F.	2.27	4.27		6.54	9
0200	8" thick		360	.111		3.92	4.68		8.60	11.45
0250	10" thick	▼	290	.138		4.08	5.80		9.88	13.35
0300	12" thick	D-9	250	.192		4.68	7.95		12.63	17.25
0500	Lightweight, 8" x 16" x 6" thick	D-8	450	.089		3	3.75		6.75	9
0600	8" thick		430	.093		3.82	3.92		7.74	10.20
0650	10" thick	▼	395	.101		3.93	4.27		8.20	10.85
0700	12" thick	D-9	350	.137	▼	4	5.65		9.65	13.05

04 22 10.26 Concrete Block Foundation Wall

0010	CONCRETE BLOCK FOUNDATION WALL, C90/C145									
0050	Normal-weight, cut joints, horiz joint reinf, no vert reinf.									
0200	Hollow, 8" x 16" x 6" thick	D-8	455	.088	S.F.	2.64	3.71		6.35	8.55
0250	8" thick		425	.094		2.93	3.97		6.90	9.30
0300	10" thick	▼	350	.114		3.43	4.82		8.25	11.10
0350	12" thick	D-9	300	.160		4.25	6.60		10.85	14.75
0500	Solid, 8" x 16" block, 6" thick	D-8	440	.091		2.81	3.83		6.64	8.95
0550	8" thick	"	415	.096		4.12	4.06		8.18	10.75
0600	12" thick	D-9	350	.137	▼	5.95	5.65		11.60	15.20

04 22 10.28 Concrete Block, High Strength

0010	CONCRETE BLOCK, HIGH STRENGTH									
0050	Hollow, reinforced alternote courses, 8" x 16" units									
0200	3500 psi, 4" thick	D-8	440	.091	S.F.	1.88	3.83		5.71	7.90
0250	6" thick		395	.101		2.20	4.27		6.47	8.90
0300	8" thick	▼	360	.111		3.85	4.68		8.53	11.40
0350	12" thick	D-9	250	.192		4.57	7.95		12.52	17.15
0500	5000 psi, 4" thick	D-8	440	.091		1.95	3.83		5.78	8
0550	6" thick		395	.101		2.84	4.27		7.11	9.60
0600	8" thick	▼	360	.111		4.04	4.68		8.72	11.60
0650	12" thick	D-9	300	.160	▼	4.59	6.60		11.19	15.10
1000	For 75% solid block, odd					30%				
1050	For 100% solid block, odd					50%				

04 22 10.30 Concrete Block, Interlocking

0010	CONCRETE BLOCK, INTERLOCKING									
0100	Not including grout or reinforcing									
0200	8" x 16" units, 2,000 psi, 8" thick	D-1	245	.065	S.F.	2.83	2.70		5.53	7.25
0300	12" thick		220	.073		4.20	3		7.20	9.20
0350	16" thick	▼	185	.086	▼	6.30	3.57		9.87	12.40

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.30 Concrete Block, Interlocking		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0400	Including grout & reinforcing, 8" thick	D-4	245	.131	S.F.	7.60	5.45	.55	13.60	17.30
0450	12" thick		220	.145		9.20	6.05	.61	15.86	19.95
0500	16" thick		185	.173		11.50	7.20	.73	19.43	24.50

04 22 10.32 Concrete Block, Lintels

0010	CONCRETE BLOCK, LINTELS, C90, normal weight									
0100	Including grout and horizontal reinforcing									
0200	8" x 8" x 8", 1 #4 bar	D-4	300	.107	L.F.	5.20	4.44	.45	10.09	13
0250	2 #4 bars		295	.108		5.45	4.52	.46	10.43	13.40
0400	8" x 16" x 8", 1 #4 bar		275	.116		3.65	4.85	.49	8.99	11.95
0450	2 #4 bars		270	.119		3.87	4.94	.50	9.31	12.30
1000	12" x 8" x 8", 1 #4 bar		275	.116		6.80	4.85	.49	12.14	15.45
1100	2 #4 bars		270	.119		7.05	4.94	.50	12.49	15.80
1150	2 #5 bars		270	.119		7.30	4.94	.50	12.74	16.05
1200	2 #6 bars		265	.121		7.60	5.05	.51	13.16	16.55
1500	12" x 16" x 8", 1 #4 bar		250	.128		7.40	5.35	.54	13.29	16.85
1600	2 #3 bars		245	.131		7.40	5.45	.55	13.40	17.05
1650	2 #4 bars		245	.131		7.60	5.45	.55	13.60	17.30
1700	2 #5 bars		240	.133		7.85	5.55	.56	13.96	17.70

04 22 10.33 Lintel Block

0010	LINTEL BLOCK									
3481	Lintel block 6" x 8" x 8"	D-1	300	.053	Eq.	1.29	2.20		3.49	4.78
3501	6" x 16" x 8"		275	.058		2	2.40		4.40	5.85
3521	8" x 8" x 8"		275	.058		1.06	2.40		3.46	4.83
3561	8" x 16" x 8"		250	.064		1.84	2.64		4.48	6.05

04 22 10.34 Concrete Block, Partitions

0010	CONCRETE BLOCK, PARTITIONS, excludes scaffolding									
0100	Acoustical slatted block									
0200	4" thick, type A-1	D-8	315	.127	S.F.	3.87	5.35		9.22	12.40
0210	8" thick		275	.145		4.95	6.15		11.10	14.80
0250	8" thick, type Q		275	.145		8.65	6.15		14.80	18.85
0260	4" thick, type RSC		315	.127		6	5.35		11.35	14.75
0270	6" thick		295	.136		6	5.70		11.70	15.30
0280	8" thick		275	.145		6	6.15		12.15	15.95
0290	12" thick		250	.160		6	6.75		12.75	16.90
0300	8" thick, type RSR		275	.145		6	6.15		12.15	15.95
0400	8" thick, type RSC/RF		275	.145		6.70	6.15		12.85	16.75
0410	10" thick		260	.154		7.20	6.50		13.70	17.80
0420	12" thick		250	.160		7.75	6.75		14.50	18.80
0430	12" thick, type RSC/RF-4		250	.160		9.35	6.75		16.10	20.50
0500	NRC .60 type R, 8" thick		265	.151		8.20	6.35		14.55	18.70
0600	NRC .65 type RR, 8" thick		265	.151		7.75	6.35		14.10	18.25
0700	NRC .65 type 4R-RF, 8" thick		265	.151		8.35	6.35		14.70	18.90
0710	NRC .70 type R, 12" thick		245	.163		8.80	6.90		15.70	20
1000	Lightweight block, taaled joints, 2 sides, hollow									
1100	Not reinforced, 8" x 16" x 4" thick	D-8	440	.091	S.F.	1.72	3.83		5.55	7.75
1150	6" thick		410	.098		2.45	4.11		6.56	8.95
1200	8" thick		385	.104		2.98	4.38		7.36	10
1250	10" thick		370	.108		3.61	4.56		8.17	10.90
1300	12" thick	D-9	350	.137		3.81	5.65		9.46	12.85
2000	Not reinforced, 8" x 24" x 4" thick, hollow		460	.104		1.25	4.31		5.56	7.90
2100	6" thick		440	.109		1.75	4.51		6.26	8.80
2150	8" thick		415	.116		2.17	4.78		6.95	9.70

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.34 Concrete Block, Partitions		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2200	10" thick	D-9	385	.125	S.F.	2.63	5.15		7.78	10.75
2250	12" thick	▼	365	.132		2.80	5.45		8.25	11.40
2800	Solid, not reinforced, 8" x 16" x 2" thick	D-8	440	.091		1.33	3.83		5.16	7.30
2900	4" thick		420	.095		1.60	4.02		5.62	7.85
2950	6" thick		390	.103		2.86	4.32		7.18	9.75
3000	8" thick		365	.110		3.68	4.62		8.30	11.10
3050	10" thick		350	.114		3.81	4.82		8.63	11.55
3100	12" thick	D-9	330	.145	▼	3.88	6		9.88	13.40
4000	Regular block, tooled joints, 2 sides, hollow									
4100	Not reinforced, 8" x 16" x 4" thick	D-8	430	.093	S.F.	1.58	3.92		5.50	7.75
4150	6" thick		400	.100		2.10	4.22		6.32	8.75
4200	8" thick		375	.107		2.37	4.50		6.87	9.45
4250	10" thick	▼	360	.111		2.86	4.68		7.54	10.30
4300	12" thick	D-9	340	.141		3.67	5.85		9.52	12.95
4500	Reinforced alternate courses, 8" x 16" x 4" thick	D-8	425	.094		1.73	3.97		5.70	7.95
4550	6" thick		395	.101		2.25	4.27		6.52	9
4600	8" thick		370	.108		2.53	4.56		7.09	9.75
4650	10" thick	▼	355	.113		3.70	4.75		8.45	11.30
4700	12" thick	D-9	335	.143		3.83	5.90		9.73	13.20
4900	Solid, not reinforced, 2" thick	D-8	435	.092		1.35	3.88		5.23	7.40
5000	3" thick		430	.093		1.44	3.92		5.36	7.60
5050	4" thick		415	.096		1.91	4.06		5.97	8.30
5100	6" thick		385	.104		2.26	4.38		6.64	9.20
5150	8" thick		360	.111		3.56	4.68		8.24	11.05
5200	12" thick	D-9	325	.148		5.40	6.10		11.50	15.20
5500	Solid, reinforced alternate courses, 4" thick	D-8	420	.095		2.02	4.02		6.04	8.30
5550	6" thick		380	.105		2.40	4.44		6.84	9.40
5600	8" thick	▼	355	.113		3.70	4.75		8.45	11.30
5650	12" thick	D-9	320	.150	▼	4.20	6.20		10.40	14.05

04 22 10.38 Concrete Brick

0010	CONCRETE BRICK, C55, grade N, type 1									
0100	Regular, 4 x 2-1/4 x 8	D-8	660	.061	Ea.	.52	2.56		3.08	4.46
0125	Rusticated, 4 x 2-1/4 x 8		660	.061		.58	2.56		3.14	4.53
0150	Frog, 4 x 2-1/4 x 8		660	.061		.56	2.56		3.12	4.51
0200	Double, 4 x 4-7/8 x 8	▼	535	.075	▼	.91	3.15		4.06	5.80

04 22 10.42 Concrete Block, Screen Block

0010	CONCRETE BLOCK, SCREEN BLOCK									
0200	8" x 16", 4" thick	D-8	330	.121	S.F.	2.22	5.10		7.32	10.25
0300	8" thick		270	.148		3.58	6.25		9.83	13.45
0350	12" x 12", 4" thick		290	.138		1.99	5.80		7.79	11.05
0500	8" thick	▼	250	.160	▼	2.59	6.75		9.34	13.15

04 22 10.44 Glazed Concrete Block

0010	GLAZED CONCRETE BLOCK C744									
0100	Single face, 8" x 16" units, 2" thick	D-8	360	.111	S.F.	9.55	4.68		14.23	17.65
0200	4" thick		345	.116		9.80	4.89		14.69	18.25
0250	6" thick		330	.121		10.60	5.10		15.70	19.45
0300	8" thick		310	.129		11.30	5.45		16.75	21
0350	10" thick	▼	295	.136		12.95	5.70		18.65	23
0400	12" thick	D-9	280	.171		13.80	7.10		20.90	26
0700	Double face, 8" x 16" units, 4" thick	D-8	340	.118		13.85	4.96		18.81	23
0750	6" thick		320	.125		16.85	5.25		22.10	26.50
0800	8" thick	▼	300	.133	▼	17.65	5.60		23.25	28

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.44 Glazed Concrete Block		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1000	Jombs, bullnose or square, single face, 8" x 16", 2" thick	D-8	315	.127	Eo.	18.25	5.35		23.60	28
1050	4" thick		285	.140	"	21.50	5.90		27.40	32.50
1200	Cops, bullnose or square, 8" x 16", 2" thick		420	.095	L.F.	16.95	4.02		20.97	25
1250	4" thick		380	.105	"	18.45	4.44		22.89	27.50
1256	Corner, bullnose or square, 2" thick		280	.143	Eo.	19.80	6		25.80	31
1258	4" thick		270	.148		21.50	6.25		27.75	33
1260	6" thick		260	.154		26.50	6.50		33	39.50
1270	8" thick		250	.160		32.50	6.75		39.25	46.50
1280	10" thick		240	.167		33	7.05		40.05	47
1290	12" thick		230	.174		34.50	7.35		41.85	49
1500	Cove base, 8" x 16", 2" thick		315	.127	L.F.	8.55	5.35		13.90	17.55
1550	4" thick		285	.140		8.65	5.90		14.55	18.50
1600	6" thick		265	.151		9.25	6.35		15.60	19.90
1650	8" thick		245	.163		9.70	6.90		16.60	21

04 23 Glass Unit Masonry

04 23 13 – Vertical Glass Unit Masonry

04 23 13.10 Glass Block

0010	GLASS BLOCK									
0100	Plain, 4" thick, under 1,000 S.F., 6" x 6"	D-8	115	.348	S.F.	29	14.65		43.65	54.50
0150	8" x 8"		160	.250		16.65	10.55		27.20	34.50
0160	end block		160	.250		59	10.55		69.55	81
0170	90 deg corner		160	.250		53.50	10.55		64.05	75
0180	45 deg corner		160	.250		44	10.55		54.55	64.50
0200	12" x 12"		175	.229		23.50	9.65		33.15	40.50
0210	4" x 8"		160	.250		32	10.55		42.55	51
0220	6" x 8"		160	.250		22.50	10.55		33.05	41
0300	1,000 to 5,000 S.F., 6" x 6"		135	.296		28.50	12.50		41	50.50
0350	8" x 8"		190	.211		16.30	8.90		25.20	31.50
0400	12" x 12"		215	.186		23	7.85		30.85	37.50
0410	4" x 8"		215	.186		31	7.85		38.85	46.50
0420	6" x 8"		215	.186		22	7.85		29.85	36.50
0500	Over 5,000 S.F., 6" x 6"		145	.276		27.50	11.65		39.15	48.50
0550	8" x 8"		215	.186		15.80	7.85		23.65	29.50
0600	12" x 12"		240	.167		22.50	7.05		29.55	35.50
0610	4" x 8"		240	.167		30.50	7.05		37.55	44
0620	6" x 8"		240	.167		21.50	7.05		28.55	34
0700	For solar reflective blocks, odd					100%				
1000	Thinline, plain, 3-1/8" thick, under 1,000 S.F., 6" x 6"	D-8	115	.348	S.F.	21	14.65		35.65	45.50
1050	8" x 8"		160	.250		11.85	10.55		22.40	29
1200	Over 5,000 S.F., 6" x 6"		145	.276		20	11.65		31.65	40
1250	8" x 8"		215	.186		11.30	7.85		19.15	24.50
1400	For cleaning block after installation (both sides), odd		1000	.040		.16	1.69		1.85	2.75
4000	Accessories									
4100	Anchors, 20 ga. galv., 1-3/4" wide x 24" long				Eo.	4.76			4.76	5.25
4200	Emulsion asphalt				Gol.	10.10			10.10	11.10
4300	Expansion joint, fiberglass				L.F.	.82			.82	.90
4400	Steel mesh, double galvanized				"	.96			.96	1.06

04 24 Adobe Unit Masonry

04 24 16 – Manufactured Adobe Unit Masonry

04 24 16.06 Adobe Brick			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0010	ADOBE BRICK, Semi-stabilized, with cement mortar										
0060	Brick, 10" x 4" x 14", 2.6/S.F.	G	D-8	560	.071	S.F.	4.17	3.01		7.18	9.20
0080	12" x 4" x 16", 2.3/S.F.	G		580	.069		6.85	2.91		9.76	12
0100	10" x 4" x 16", 2.3/S.F.	G		590	.068		6.30	2.86		9.16	11.30
0120	8" x 4" x 16", 2.3/S.F.	G		560	.071		4.82	3.01		7.83	9.90
0140	4" x 4" x 16", 2.3/S.F.	G		540	.074		4.75	3.12		7.87	10
0160	6" x 4" x 16", 2.3/S.F.	G		540	.074		4.39	3.12		7.51	9.60
0180	4" x 4" x 12", 3.0/S.F.	G		520	.077		5	3.24		8.24	10.45
0200	8" x 4" x 12", 3.0/S.F.	G		520	.077		3.98	3.24		7.22	9.30

04 25 Unit Masonry Panels

04 25 20 – Pre-Fabricated Masonry Panels

04 25 20.10 Brick and Epoxy Mortar Panels

0010	BRICK AND EPOXY MORTAR PANELS										
0020	Prefabricated brick & epoxy mortar, 4" thick, minimum		G-11	775	.093	S.F.	5.45	4.68	2.37	12.50	16.60
0100	Maximum		"	500	.144		6.65	7.25	3.68	17.58	24
0200	For 2" concrete back-up, add						50%				
0300	For 1" urethane & 3" concrete back-up, add						70%				

04 27 Multiple-Wythe Unit Masonry

04 27 10 – Multiple-Wythe Masonry

04 27 10.20 Cavity Walls

0010	CAVITY WALLS, brick and CMU, includes joint reinforcing and ties										
0200	4" face brick, 4" block		D-8	165	.242	S.F.	5.75	10.20		15.95	22
0400	6" block			145	.276		6.15	11.65		17.80	24.50
0600	8" block			125	.320		6.30	13.50		19.80	27.50

04 27 10.30 Brick Walls

0010	BRICK WALLS, including mortar, excludes scaffolding	R042110-20									
0020	Estimating by number of brick										
0140	Face brick, 4" thick wall, 6.75 brick/S.F.		D-8	1.45	27.586	M	585	1,175		1,760	2,425
0150	Common brick, 4" thick wall, 6.75 brick/S.F.			1.60	25		585	1,050		1,635	2,250
0204	8" thick, 13.50 bricks per S.F.			1.80	22.222		600	935		1,535	2,075
0250	12" thick, 20.25 bricks per S.F.			1.90	21.053		605	890		1,495	2,025
0304	16" thick, 27.00 bricks per S.F.			2	20		610	845		1,455	1,950
0500	Reinforced, face brick, 4" thick wall, 6.75 brick/S.F.			1.40	28.571		610	1,200		1,810	2,500
0520	Common brick, 4" thick wall, 6.75 brick/S.F.			1.55	25.806		610	1,100		1,710	2,325
0550	8" thick, 13.50 bricks per S.F.			1.75	22.857		625	965		1,590	2,175
0600	12" thick, 20.25 bricks per S.F.			1.85	21.622		630	910		1,540	2,100
0650	16" thick, 27.00 bricks per S.F.			1.95	20.513		635	865		1,500	2,025
0790	Alternate method of figuring by square foot										
0800	Face brick, 4" thick wall, 6.75 brick/S.F.		D-8	215	.186	S.F.	3.93	7.85		11.78	16.30
0850	Common brick, 4" thick wall, 6.75 brick/S.F.			240	.167		3.94	7.05		10.99	15.05
0900	8" thick, 13.50 bricks per S.F.			135	.296		8.10	12.50		20.60	28
1000	12" thick, 20.25 bricks per S.F.			95	.421		12.20	17.75		29.95	40.50
1050	16" thick, 27.00 bricks per S.F.			75	.533		16.50	22.50		39	52.50
1200	Reinforced, face brick, 4" thick wall, 6.75 brick/S.F.			210	.190		4.10	8.05		12.15	16.75
1220	Common brick, 4" thick wall, 6.75 brick/S.F.			235	.170		4.11	7.20		11.31	15.45
1250	8" thick, 13.50 bricks per S.F.			130	.308		8.45	12.95		21.40	29
1300	12" thick, 20.25 bricks per S.F.			90	.444		12.75	18.75		31.50	42.50

04 27 Multiple-Wythe Unit Masonry

04 27 10 – Multiple-Wythe Masonry

04 27 10.30 Brick Walls		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1350	16" thick, 27.00 bricks per S.F.	D-8	70	.571	S.F.	17.20	24		41.20	55.50
04 27 10.40 Steps										
0010	STEPS									
0012	Entry steps, select common brick	D-1	.30	53.333	M	550	2,200		2,750	3,950

04 41 Dry-Placed Stone

04 41 10 – Dry Placed Stone

04 41 10.10 Rough Stone Wall

0011	ROUGH STONE WALL, Dry									
0012	Dry laid (no mortar), under 18" thick	G	D-1	60	.267	C.F.	12.40	11	23.40	30.50
0100	Rondom fieldstone, under 18" thick	G	D-12	60	.533		12.40	22.50	34.90	47.50
0150	Over 18" thick	G	"	63	.508		14.85	21	35.85	49
0500	Field stone veneer	G	D-8	120	.333	S.F.	11.45	14.05	25.50	34
0510	Volley stone veneer	G		120	.333		11.45	14.05	25.50	34
0520	River stone veneer	G		120	.333		11.45	14.05	25.50	34
0600	Rubble stone walls, in mortar bed, up to 18" thick	G	D-11	75	.320	C.F.	14.95	13.90	28.85	37.50

04 43 Stone Masonry

04 43 10 – Masonry with Natural and Processed Stone

04 43 10.05 Ashlar Veneer

0011	ASHLAR VENEER 4" + or - thick, rondom or rondom rectangulor									
0150	Sown face, split joints, low priced stone		D-8	140	.286	S.F.	11.55	12.05	23.60	31
0200	Medium priced stone			130	.308		13.30	12.95	26.25	34.50
0300	High priced stone			120	.333		17.85	14.05	31.90	41
0600	Seom face, split joints, medium price stone			125	.320		20	13.50	33.50	42.50
0700	High price stone			120	.333		20.50	14.05	34.55	44
1000	Split or rock face, split joints, medium price stone			125	.320		14.70	13.50	28.20	36.50
1100	High price stone			120	.333		19.05	14.05	33.10	42.50

04 43 10.10 Bluestone

0010	BLUESTONE, cut to size									
0500	Sills, noturol cleft, 10" wide to 6' long, 1-1/2" thick		D-11	70	.343	L.F.	13.35	14.90	28.25	37
0550	2" thick		"	63	.381		14.60	16.55	31.15	41
1000	Stoir treods, noturol cleft, 12" wide, 6' long, 1-1/2" thick		D-10	115	.278		12	12.55	4.19	28.74
1050	2" thick			105	.305		13	13.75	4.58	31.33
1100	Smooth finish, 1-1/2" thick			115	.278		12	12.55	4.19	28.74
1150	2" thick			105	.305		13	13.75	4.58	31.33
1300	Thermol finish, 1-1/2" thick			115	.278		12	12.55	4.19	28.74
1350	2" thick			105	.305		13	13.75	4.58	31.33

04 43 10.45 Granite

0010	GRANITE, cut to size									
0050	Veneer, polished face, 3/4" to 1-1/2" thick									
0150	Low price, groy, light groy, etc.		D-10	130	.246	S.F.	26.50	11.10	3.70	41.30
0180	Medium price, pink, brown, etc.			130	.246		29.50	11.10	3.70	44.30
0220	High price, red, block, etc.			130	.246		42	11.10	3.70	56.80
0300	1-1/2" to 2-1/2" thick, veneer									
0350	Low price, groy, light groy, etc.		D-10	130	.246	S.F.	28.50	11.10	3.70	43.30
0500	Medium price, pink, brown, etc.			130	.246		33.50	11.10	3.70	48.30
0550	High price, red, block, etc.			130	.246		52.50	11.10	3.70	67.30

04 43 Stone Masonry

04 43 10 – Masonry with Natural and Processed Stone

04 43 10.45 Granite		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0700	2-1/2" to 4" thick, veneer									
0750	Low price, gray, light gray, etc.	D-10	110	.291	S.F.	38.50	13.10	4.38	55.98	67.50
0850	Medium price, pink, brown, etc.		110	.291		44	13.10	4.38	61.48	73.50
0950	High price, red, black, etc.	▼	110	.291		63	13.10	4.38	80.48	94.50
1000	Far bush hammered finish, deduct					5%				
1050	Coarse rubbed finish, deduct					10%				
1100	Flamed finish, deduct					5%				
1150	Thermal finish, deduct					18%				
2450	Far radius under 5', add				L.F.	100%				
2500	Steps, copings, etc., finished on more than one surface									
2550	Minimum	D-10	50	.640	C.F.	91	29	9.65	129.65	155
2600	Maximum	"	50	.640	"	146	29	9.65	184.65	215
2800	Pavers, 4" x 4" x 4" blacks, split face and joints									
2850	Minimum	D-11	80	.300	S.F.	13.10	13		26.10	34.50
2900	Maximum	"	80	.300		29	13		42	52
4000	Soffits, 2" thick, minimum	D-13	35	1.371		37.50	60	13.75	111.25	149
4100	Maximum		35	1.371		91.50	60	13.75	165.25	207
4200	4" thick, minimum		35	1.371		63	60	13.75	136.75	177
4300	Maximum		35	1.371		119	60	13.75	192.75	238

04 43 10.50 Lightweight Natural Stone

0011	LIGHTWEIGHT NATURAL STONE Lava type										
0100	Veneer, rubble face, sawed back, irregular shapes		D-10	130	.246	S.F.	6.25	11.10	3.70	21.05	28
0200	Sawed face and back, irregular shapes		"	130	.246	"	6.25	11.10	3.70	21.05	28

04 43 10.55 Limestone

0010	LIMESTONE , cut to size									
0020	Veneer facing panels									
0500	Texture finish, light stick, 4-1/2" thick, 5' x 12'	D-4	300	.107	S.F.	47.50	4.44	.45	52.39	59.50
0750	5" thick, 5' x 14' panels	D-10	275	.116		51.50	5.25	1.75	58.50	67
1000	Sugarcube finish, 2" Thick, 3' x 5' panels		275	.116		35	5.25	1.75	42	48.50
1050	3" Thick, 4' x 9' panels		275	.116		38	5.25	1.75	45	51.50
1200	4" Thick, 5' x 11' panels		275	.116		40.50	5.25	1.75	47.50	55
1400	Sugarcube, textured finish, 4-1/2" thick, 5' x 12'		275	.116		44.50	5.25	1.75	51.50	59
1450	5" thick, 5' x 14' panels		275	.116		53	5.25	1.75	60	68
2000	Caping, sugarcube finish, top & 2 sides		30	1.067	C.F.	67.50	48	16.05	131.55	165
2100	Sills, lintels, jambs, trim, steps, sugarcube finish, average		20	1.600		67.50	72	24	163.50	211
2150	Detailed		20	1.600		67.50	72	24	163.50	211
2300	Steps, extra hard, 14" wide, 6" rise	▼	50	.640	L.F.	25	29	9.65	63.65	82
3000	Quoins, plain finish, 6" x 12" x 12"	D-12	25	1.280	Ea.	37.50	53.50		91	123
3050	6" x 16" x 24"	"	25	1.280	"	50	53.50		103.50	137

04 43 10.60 Marble

0011	MARBLE , ashlar, split face, 4" + or - thick, random									
0040	Lengths 1' to 4' & heights 2" to 7-1/2", average	D-8	175	.229	S.F.	14.25	9.65		23.90	30.50
0100	Base, polished, 3/4" or 7/8" thick, polished, 6" high	D-10	65	.492	L.F.	10.55	22	7.40	39.95	54
0300	Carvings or bas relief, from templates, average		80	.400	S.F.	144	18.05	6	168.05	192
0350	Maximum	▼	80	.400	"	335	18.05	6	359.05	405
0600	Columns, cornices, moldings, etc.									
0650	Hand or special machine cut, average	D-10	35	.914	C.F.	133	41	13.75	187.75	224
0700	Maximum	"	35	.914	"	278	41	13.75	332.75	385
1000	Facing, polished finish, cut to size, 3/4" to 7/8" thick									
1050	Average	D-10	130	.246	S.F.	23.50	11.10	3.70	38.30	46.50
1100	Maximum		130	.246		33.50	11.10	3.70	48.30	58
1300	1-1/4" thick, average		125	.256		17.75	11.55	3.85	33.15	41.50

04 43 Stone Masonry

04 43 10 – Masonry with Natural and Processed Stone

04 43 10.60 Marble		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1350	Maximum	D-10	125	.256	S.F.	40	11.55	3.85	55.40	66
1500	2" thick, average		120	.267		40	12.05	4.01	56.06	66.50
1550	Maximum	▼	120	.267	▼	62	12.05	4.01	78.06	90.50
1700	Rubbed finish, cut to size, 4" thick									
1740	Average	D-10	100	.320	S.F.	40	14.45	4.81	59.26	71.50
1780	Maximum	"	100	.320	"	69	14.45	4.81	88.26	103
2200	Window sills, 6" x 3/4" thick	D-1	85	.188	L.F.	10.45	7.75		18.20	23.50
2500	Flooring, polished tiles, 12" x 12" x 3/8" thick									
2510	Thin set, average	D-11	90	.267	S.F.	8.45	11.55		20	27
2600	Maximum		90	.267		86	11.55		97.55	112
2700	Mortar bed, average		65	.369		8.45	16		24.45	34
2740	Maximum	▼	65	.369		90.50	16		106.50	124
2780	Travertine, 3/8" thick, average	D-10	130	.246		9.25	11.10	3.70	24.05	31
2790	Maximum	"	130	.246		25.50	11.10	3.70	40.30	49
2800	Patio tile, non-slip, 1/2" thick, flame finish	D-11	75	.320		11	13.90		24.90	33
2900	Shower or toilet partitions, 7/8" thick partitions									
3050	3/4" or 1-1/4" thick stiles, polished 2 sides, average	D-11	75	.320	S.F.	45.50	13.90		59.40	71
3201	Soffits, add to above prices				"	20%	100%			
3210	Stairs, risers, 7/8" thick x 6" high	D-10	115	.278	L.F.	15.25	12.55	4.19	31.99	40.50
3360	Treads, 12" wide x 1-1/4" thick	"	115	.278	"	42.50	12.55	4.19	59.24	70
3500	Thresholds, 3' long, 7/8" thick, 4" to 5" wide, plain	D-12	24	1.333	Ea.	31.50	55.50		87	120
3550	Beveled		24	1.333	"	67.50	55.50		123	159
3700	Window stools, polished, 7/8" thick, 5" wide		85	.376	L.F.	20.50	15.75		36.25	46.50

04 43 10.75 Sandstone or Brownstone

0011	SANDSTONE OR BROWNSTONE									
0100	Sawn face veneer, 2-1/2" thick, to 2' x 4' panels	D-10	130	.246	S.F.	19	11.10	3.70	33.80	42
0150	4" thick, to 3'-6" x 8' panels		100	.320		19	14.45	4.81	38.26	48.50
0300	Split face, random sizes	▼	100	.320	▼	13.65	14.45	4.81	32.91	42.50
0350	Cut stone trim (limestone)									
0360	Ribban stone, 4" thick, 5' pieces	D-8	120	.333	Ea.	172	14.05		186.05	211
0370	Cave stone, 4" thick, 5' pieces		105	.381		173	16.05		189.05	215
0380	Cornice stone, 10" to 12" wide		90	.444		214	18.75		232.75	264
0390	Band stone, 4" thick, 5' pieces		145	.276		110	11.65		121.65	139
0410	Window and door trim, 3" to 4" wide		160	.250		93.50	10.55		104.05	119
0420	Key stone, 18" long		60	.667	▼	98.50	28		126.50	151

04 43 10.80 Slate

0010	SLATE									
0040	Pennsylvania - blue gray to black									
0050	Vermont - unfading green, mottled green & purple, gray & purple									
0100	Virginia - blue black									
0200	Exterior paving, natural cleft, 1" thick									
0250	6" x 6" Pennsylvania	D-12	100	.320	S.F.	6.75	13.40		20.15	28
0300	Vermont		100	.320		11.25	13.40		24.65	33
0350	Virginia		100	.320		14.10	13.40		27.50	36
0500	24" x 24", Pennsylvania		120	.267		13	11.15		24.15	31.50
0550	Vermont		120	.267		28	11.15		39.15	47.50
0600	Virginia		120	.267		20.50	11.15		31.65	39.50
0700	18" x 30" Pennsylvania		120	.267		14.75	11.15		25.90	33.50
0750	Vermont		120	.267		28	11.15		39.15	47.50
0800	Virginia	▼	120	.267	▼	18.20	11.15		29.35	37
1000	Interior flooring, natural cleft, 1/2" thick									
1100	6" x 6" Pennsylvania	D-12	100	.320	S.F.	4	13.40		17.40	25

04 43 Stone Masonry

04 43 10 – Masonry with Natural and Processed Stone

04 43 10.80 Slate		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1150	Vermont	D-12	100	.320	S.F.	9.90	13.40		23.30	31.50
1200	Virginia		100	.320		11.15	13.40		24.55	33
1300	24" x 24" Pennsylvania		120	.267		7.75	11.15		18.90	25.50
1350	Vermant		120	.267		22.50	11.15		33.65	42
1400	Virginia		120	.267		14.75	11.15		25.90	33
1500	18" x 24" Pennsylvania		120	.267		7.75	11.15		18.90	25.50
1550	Vermant		120	.267		18	11.15		29.15	37
1600	Virginia	↓	120	.267	↓	14.95	11.15		26.10	33.50
2000	Facing panels, 1-1/4" thick, ta 4' x 4' panels									
2100	Natural cleft finish, Pennsylvania	D-10	180	.178	S.F.	34	8	2.67	44.67	52
2110	Vermant		180	.178		27	8	2.67	37.67	45
2120	Virginia	↓	180	.178		33	8	2.67	43.67	51.50
2150	Sond rubbed finish, surface, add					10.15			10.15	11.20
2200	Honed finish, add					7.35			7.35	8.10
2500	Ribban, natural cleft finish, 1" thick, ta 9 S.F.	D-10	80	.400		13.10	18.05	6	37.15	48.50
2550	Sond rubbed finish		80	.400		17.75	18.05	6	41.80	53.50
2600	Haned finish		80	.400		16.50	18.05	6	40.55	52.50
2700	1-1/2" thick		78	.410		17.05	18.50	6.15	41.70	53.50
2750	Sond rubbed finish		78	.410		22.50	18.50	6.15	47.15	60
2800	Honed finish		78	.410		21.50	18.50	6.15	46.15	58.50
2850	2" thick		76	.421		20.50	19	6.35	45.85	58.50
2900	Sand rubbed finish		76	.421		28.50	19	6.35	53.85	67
2950	Haned finish	↓	76	.421		26	19	6.35	51.35	64.50
3100	Stair landings, 1" thick, black, clear	D-1	65	.246		20	10.15		30.15	37.50
3200	Ribbon	"	65	.246	↓	22	10.15		32.15	39.50
3500	Stair treods, sond finish, 1" thick x 12" wide									
3550	Under 3 L.F.	D-10	85	.376	L.F.	22	17	5.65	44.65	56.50
3600	3 L.F. to 6 L.F.	"	120	.267	"	24	12.05	4.01	40.06	48.50
3700	Ribbon, sand finish, 1" thick x 12" wide									
3750	Ta 6 L.F.	D-10	120	.267	L.F.	20	12.05	4.01	36.06	44.50
4000	Staols ar sills, sand finish, 1" thick, 6" wide	D-12	160	.200		11.50	8.35		19.85	25.50
4100	Honed finish		160	.200		11	8.35		19.35	25
4200	10" wide		90	.356		17.75	14.85		32.60	42
4250	Honed finish		90	.356		16.50	14.85		31.35	40.50
4400	2" thick, 6" wide		140	.229		18.50	9.55		28.05	35
4450	Honed finish		140	.229		17.60	9.55		27.15	34
4600	10" wide	↓	90	.356	↓	29	14.85		43.85	54.50
4650	Haned finish	↓	90	.356	↓	27.50	14.85		42.35	53
4800	For lengths aver 3', add				↓	25%				

04 43 10.85 Window Sill

0010	WINDOW SILL									
0020	Bluestane, thermol top, 10" wide, 1-1/2" thick	D-1	85	.188	S.F.	9.25	7.75		17	22
0050	2" thick		75	.213	"	8.85	8.80		17.65	23
0100	Cut stane, 5" x 8" plain		48	.333	L.F.	11.90	13.75		25.65	34
0200	Foce brick an edge, brick, 8" wide		80	.200		5.30	8.25		13.55	18.40
0400	Marble, 9" wide, 1" thick		85	.188		8.50	7.75		16.25	21
0900	Slate, colared, unfading, haned, 12" wide, 1" thick		85	.188		8.50	7.75		16.25	21
0950	2" thick	↓	70	.229	↓	8.50	9.45		17.95	24

04 51 Flue Liner Masonry

04 51 10 – Clay Flue Lining

04 51 10.10 Flue Lining

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	FLUE LINING , including mortar									
0020	Clay, 8" x 8"	D-1	125	.128	V.L.F.	5.30	5.30		10.60	13.85
0100	8" x 12"		103	.155		7.85	6.40		14.25	18.45
0200	12" x 12"		93	.172		10.20	7.10		17.30	22
0300	12" x 18"		84	.190		20	7.85		27.85	34
0400	18" x 18"		75	.213		26	8.80		34.80	42.50
0500	20" x 20"		66	.242		40	10		50	59.50
0600	24" x 24"		56	.286		51.50	11.80		63.30	74.50
1000	Round, 18" diameter		66	.242		37	10		47	56
1100	24" diameter		47	.340		72	14.05		86.05	101

04 54 Refractory Brick Masonry

04 54 10 – Refractory Brick Work

04 54 10.10 Fire Brick

0010	FIRE BRICK									
0012	Low duty, 2000°F, 9" x 2-1/2" x 4-1/2"	D-1	.60	26.667	M	1,375	1,100		2,475	3,200
0050	High duty, 3000°F	"	.60	26.667	"	1,800	1,100		2,900	3,650

04 54 10.20 Fire Clay

0010	FIRE CLAY									
0020	Gray, high duty, 100 lb. bag				Bog	30			30	33
0050	100 lb. drum, premixed (400 brick per drum)				Drum	41			41	45

04 57 Masonry Fireplaces

04 57 10 – Brick or Stone Fireplaces

04 57 10.10 Fireplace

0010	FIREPLACE									
0100	Brick fireplace, not incl. foundations or chimneys									
0110	30" x 29" opening, incl. chamber, plain brickwork	D-1	.40	40	Eq.	550	1,650		2,200	3,125
0200	Fireplace box only (110 brick)	"	2	8	"	157	330		487	675
0300	For elaborate brickwork and details, odd					35%	35%			
0400	For hearth, brick & stone, odd	D-1	2	8	Eq.	205	330		535	730
0410	For steel, damper, cleanouts, odd		4	4		19.40	165		184.40	274
0600	Plain brickwork, incl. metal circulator		.50	32		985	1,325		2,310	3,100
0800	Face brick only, standard size, 8" x 2-2/3" x 4"		.30	53.333	M	550	2,200		2,750	3,950

04 71 Manufactured Brick Masonry

04 71 10 – Simulated or Manufactured Brick

04 71 10.10 Simulated Brick

0010	SIMULATED BRICK									
0020	Aluminum, baked on colors	1 Corp	200	.040	S.F.	3.92	1.83		5.75	7.15
0050	Fiberglass panels		200	.040		8.05	1.83		9.88	11.70
0100	Urethane pieces cemented in mastic		150	.053		8.25	2.45		10.70	12.80
0150	Vinyl siding panels		200	.040		9.70	1.83		11.53	13.55
0160	Cement base, brick, incl. mastic	D-1	100	.160		9.65	6.60		16.25	20.50
0170	Corner		50	.320	V.L.F.	20.50	13.20		33.70	42.50
0180	Stone face, incl. mastic		100	.160	S.F.	8.90	6.60		15.50	19.85
0190	Corner		50	.320	V.L.F.	20.50	13.20		33.70	42.50

04 72 Cast Stone Masonry

04 72 10 – Cast Stone Masonry Features

04 72 10.10 Coping		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	COPING , stack units									
0050	Precast concrete, 10" wide, 4" tapers to 3-1/2", 8" wall	D-1	75	.213	L.F.	17.10	8.80		25.90	32.50
0100	12" wide, 3-1/2" tapers to 3", 10" wall		70	.229		18.45	9.45		27.90	35
0110	14" wide, 4" tapers to 3-1/2", 12" wall		65	.246		20.50	10.15		30.65	38
0150	16" wide, 4" tapers to 3-1/2", 14" wall		60	.267	▼	22	11		33	41.50
0250	Precast concrete corners		40	.400	Eq.	29	16.50		45.50	56.50
0300	Limestone for 12" wall, 4" thick		90	.178	L.F.	14.70	7.35		22.05	27.50
0350	6" thick		80	.200		22	8.25		30.25	37
0500	Marble, to 4" thick, no wash, 9" wide		90	.178		13.70	7.35		21.05	26.50
0550	12" wide		80	.200		15.70	8.25		23.95	30
0700	Terra cotta, 9" wide		90	.178		6.15	7.35		13.50	17.95
0750	12" wide		80	.200		8.40	8.25		16.65	22
0800	Aluminum, for 12" wall	▼	80	.200	▼	8.90	8.25		17.15	22.50

04 72 20 – Cultured Stone Veneer

04 72 20.10 Cultured Stone Veneer Components

0010	CULTURED STONE VENEER COMPONENTS									
0110	On wood frame and sheathing substrate, random sized cobbles, corner stones	D-8	70	.571	V.L.F.	9.10	24		33.10	46.50
0120	Field stones		140	.286	S.F.	6.65	12.05		18.70	25.50
0130	Random sized flats, corner stones		70	.571	V.L.F.	9.35	24		33.35	47
0140	Field stones		140	.286	S.F.	7.55	12.05		19.60	26.50
0150	Horizontal lined ledgerstones, corner stones		75	.533	V.L.F.	9.30	22.50		31.80	44.50
0160	Field stones		150	.267	S.F.	6.85	11.25		18.10	24.50
0170	Random shaped flats, corner stones		65	.615	V.L.F.	9.30	26		35.30	49.50
0180	Field stones		150	.267	S.F.	6.85	11.25		18.10	24.50
0190	Random shaped/textured face, corner stones		65	.615	V.L.F.	9.10	26		35.10	49.50
0200	Field stones		130	.308	S.F.	6.85	12.95		19.80	27.50
0210	Random shaped river rock, corner stones		65	.615	V.L.F.	9.10	26		35.10	49.50
0220	Field stones		130	.308	S.F.	6.85	12.95		19.80	27.50
0240	On concrete or CMU substrate, random sized cobbles, corner stones		70	.571	V.L.F.	8.45	24		32.45	46
0250	Field stones		140	.286	S.F.	6.30	12.05		18.35	25.50
0260	Random sized flats, corner stones		70	.571	V.L.F.	8.70	24		32.70	46
0270	Field stones		140	.286	S.F.	7.20	12.05		19.25	26.50
0280	Horizontal lined ledgerstones, corner stones		75	.533	V.L.F.	8.60	22.50		31.10	44
0290	Field stones		150	.267	S.F.	6.50	11.25		17.75	24.50
0300	Random shaped flats, corner stones		70	.571	V.L.F.	8.60	24		32.60	46
0310	Field stones		140	.286	S.F.	6.50	12.05		18.55	25.50
0320	Random shaped/textured face, corner stones		65	.615	V.L.F.	8.45	26		34.45	49
0330	Field stones		130	.308	S.F.	6.55	12.95		19.50	27
0340	Random shaped river rock, corner stones		65	.615	V.L.F.	8.45	26		34.45	49
0350	Field stones	▼	130	.308	S.F.	6.55	12.95		19.50	27
0360	Cultured stone veneer, #15 felt weather resistant barrier	1 Clab	3700	.002	Sq.	5.40	.08		5.48	6.05
0370	Expanded metal lath, diamond, 2.5 lb./S.Y., galvanized	1 Lath	85	.094	S.Y.	3.05	3.82		6.87	8.95
0390	Water table or window sill, 18" long	1 Bric	80	.100	Eq.	9.50	4.56		14.06	17.40

04 73 Manufactured Stone Masonry

04 73 20 – Simulated or Manufactured Stone

04 73 20.10 Simulated Stone

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SIMULATED STONE									
0100	Insulated fiberglass panels, 5/8" ply backer	L-4	200	.120	S.F.	10.55	5.15		15.70	19.60

Estimating Tips

05 05 00 Common Work Results for Metals

- Nuts, bolts, washers, connection angles, and plates can add a significant amount to both the tonnage of a structural steel job and the estimated cost. As a rule of thumb, add 10% to the total weight to account for these accessories.
- Type 2 steel construction, commonly referred to as "simple construction," consists generally of field-bolted connections with lateral bracing supplied by other elements of the building, such as masonry walls or x-bracing. The estimator should be aware, however, that shop connections may be accomplished by welding or bolting. The method may be particular to the fabrication shop and may have an impact on the estimated cost.

05 10 00 Structural Steel

- Steel items can be obtained from two sources: a fabrication shop or a metals service center. Fabrication shops can fabricate items under more controlled conditions than can crews in the field. They are also more efficient and can produce items more economically. Metal service centers serve as a source of long mill shapes to both fabrication shops and contractors.
- Most line items in this structural steel subdivision, and most items in 05 50 00 Metal Fabrications, are indicated as being shop fabricated. The bare material cost for these shop fabricated items is the "Invoice Cost" from the shop and includes the mill base price of steel plus mill extras, transportation to the shop, shop drawings and detailing where warranted, shop fabrication and handling, sandblasting and a shop coat of primer paint, all necessary structural bolts, and delivery to the job site. The bare labor cost and

bare equipment cost for these shop fabricated items is for field installation or erection.

- Line items in Subdivision 05 12 23.40 Lightweight Framing, and other items scattered in Division 5, are indicated as being field fabricated. The bare material cost for these field fabricated items is the "Invoice Cost" from the metals service center and includes the mill base price of steel plus mill extras, transportation to the metals service center, material handling, and delivery of long lengths of mill shapes to the job site. Material costs for structural bolts and welding rods should be added to the estimate. The bare labor cost and bare equipment cost for these items is for both field fabrication and field installation or erection, and include time for cutting, welding and drilling in the fabricated metal items. Drilling into concrete and fasteners to fasten field fabricated items to other work are not included and should be added to the estimate.

05 20 00 Steel Joist Framing

- In any given project the total weight of open web steel joists is determined by the loads to be supported and the design. However, economies can be realized in minimizing the amount of labor used to place the joists. This is done by maximizing the joist spacing, and therefore minimizing the number of joists required to be installed on the job. Certain spacings and locations may be required by the design, but in other cases maximizing the spacing and keeping it as uniform as possible will keep the costs down.

05 30 00 Steel Decking

- The takeoff and estimating of metal deck involves more than simply the area of the floor or roof and the type of deck specified or shown on the drawings. Many different sizes and types of

openings may exist. Small openings for individual pipes or conduits may be drilled after the floor/roof is installed, but larger openings may require special deck lengths as well as reinforcing or structural support. The estimator should determine who will be supplying this reinforcing. Additionally, some deck terminations are part of the deck package, such as screed angles and pour stops, and others will be part of the steel contract, such as angles attached to structural members and cast-in-place angles and plates. The estimator must ensure that all pieces are accounted for in the complete estimate.

05 50 00 Metal Fabrications

- The most economical steel stairs are those that use common materials, standard details, and most importantly, a uniform and relatively simple method of field assembly. Commonly available A36 channels and plates are very good choices for the main stringers of the stairs, as are angles and tees for the carrier members. Risers and treads are usually made by specialty shops, and it is most economical to use a typical detail in as many places as possible. The stairs should be pre-assembled and shipped directly to the site. The field connections should be simple and straightforward to be accomplished efficiently, and with minimum equipment and labor.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information. *Note:* Not all subdivisions listed here necessarily appear in this publication.

05 01 Maintenance of Metals

05 01 10 – Maintenance of Structural Metal Framing

05 01 10.51 Cleaning of Structural Metal Framing

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	CLEANING OF STRUCTURAL METAL FRAMING									
6125	Steel surface treatments, PDCA guidelines									
6170	Wire brush, hand (SSPC-SP2)	1 Psst	400	.020	S.F.	.02	.81		.83	1.49
6180	Power tool (SSPC-SP3)	"	700	.011		.09	.46		.55	.93
6215	Pressure washing, up to 5000 psi, 5000-15,000 S.F./day	1 Pord	10000	.001			.03		.03	.05
6220	Steam cleaning, 600 psi @ 300 F, 1250 – 2500 S.F./day		2000	.004			.16		.16	.24
6225	Water blasting, up to 25,000 psi, 1750 – 3500 S.F./day	▼	2500	.003			.13		.13	.19
6230	Brush-off blast (SSPC-SP7)	E-11	1750	.018		.17	.75	.14	1.06	1.58
6235	Com'l blast (SSPC-SP6), loose scale, fine powder rust, 2.0#/S.F. sand		1200	.027		.33	1.10	.20	1.63	2.42
6240	Tight mill scale, little/no rust, 3.0#/S.F. sand		1000	.032		.50	1.32	.24	2.06	3
6245	Exist coat blistered/pitted, 4.0#/S.F. sand		875	.037		.67	1.51	.27	2.45	3.55
6250	Exist coat badly pitted/nodules, 6.7#/S.F. sand		825	.039		1.12	1.60	.29	3.01	4.21
6255	Near white blast (SSPC-SP10), loose scale, fine rust, 5.6#/S.F. sand		450	.071		.94	2.93	.53	4.40	6.50
6260	Tight mill scale, little/no rust, 6.9#/S.F. sand		325	.098		1.16	4.05	.73	5.94	8.80
6265	Exist coat blistered/pitted, 9.0#/S.F. sand		225	.142		1.51	5.85	1.05	8.41	12.55
6270	Exist coat badly pitted/nodules, 11.3#/S.F. sand	▼	150	.213	▼	1.89	8.80	1.58	12.27	18.40

05 05 Common Work Results for Metals

05 05 05 – Selective Metals Demolition

05 05 05.10 Selective Demolition, Metals

0010	SELECTIVE DEMOLITION, METALS	R024119-10								
0015	Excludes shores, bracing, cutting, loading, hauling, dumping									
0020	Remove nuts only up to 3/4" diameter	1 Sswk	480	.017	EO.		.85		.85	1.50
0030	7/8" to 1-1/4" diameter		240	.033			1.70		1.70	3.01
0040	1-3/8" to 2" diameter		160	.050			2.56		2.56	4.51
0060	Unbolt and remove structural bolts up to 3/4" diameter		240	.033			1.70		1.70	3.01
0070	7/8" to 2" diameter		160	.050			2.56		2.56	4.51
0140	Light weight framing members, remove whole or cut up, up to 20 lb.	▼	240	.033			1.70		1.70	3.01
0150	21 – 40 lb.	2 Sswk	210	.076			3.89		3.89	6.85
0160	41 – 80 lb.	3 Sswk	180	.133			6.80		6.80	12.05
0170	81 – 120 lb.	4 Sswk	150	.213			10.90		10.90	19.25
0230	Structural members, remove whole or cut up, up to 500 lb.	E-19	48	.500			25	20	45	64.50
0240	1/4 – 2 tons	E-18	36	1.111			56.50	26.50	83	127
0250	2 – 5 tons	E-24	30	1.067			54	25	79	120
0260	5 – 10 tons	E-20	24	2.667			134	49	183	283
0270	10 – 15 tons	E-2	18	3.111			156	85	241	360
0340	Fabricated item, remove whole or cut up, up to 20 lb.	1 Sswk	96	.083			4.26		4.26	7.50
0350	21 – 40 lb.	2 Sswk	84	.190			9.75		9.75	17.20
0360	41 – 80 lb.	3 Sswk	72	.333			17.05		17.05	30
0370	81 – 120 lb.	4 Sswk	60	.533			27.50		27.50	48
0380	121 – 500 lb.	E-19	48	.500			25	20	45	64.50
0390	501 – 1000 lb.	"	36	.667	▼		33.50	26.50	60	86
0500	Steel roof decking, uncovered, bare	B-2	5000	.008	S.F.		.30		.30	.46

05 05 13 – Shop-Applied Coatings for Metal

05 05 13.50 Paints and Protective Coatings

0010	PAINTS AND PROTECTIVE COATINGS									
5900	Galvanizing structural steel in shop, under 1 ton	R050516-30			Ton	550			550	605
5950	1 ton to 20 tons					505			505	555
6000	Over 20 tons					460			460	505

05 05 Common Work Results for Metals

05 05 19 – Post-Installed Concrete Anchors

05 05 19.10 Chemical Anchors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	CHEMICAL ANCHORS									
0020	Includes layout & drilling									
1430	Chemical anchor, w/rod & epoxy cartridge, 3/4" diam. x 9-1/2" long	B-89A	27	.593	Ea.	9.75	25	4.30	39.05	54
1435	1" diameter x 11-3/4" long		24	.667		16.70	28	4.84	49.54	67
1440	1-1/4" diameter x 14" long		21	.762		36	32	5.55	73.55	95.50
1445	1-3/4" diameter x 15" long		20	.800		64.50	33.50	5.80	103.80	129
1450	18" long		17	.941		77.50	39.50	6.85	123.85	154
1455	2" diameter x 18" long		16	1		102	42	7.25	151.25	185
1460	24" long		15	1.067		132	45	7.75	184.75	224
05 05 19.20 Expansion Anchors										
0010	EXPANSION ANCHORS									
0100	Anchors for concrete, brick or stone, no layout and drilling									
0200	Expansion shields, zinc, 1/4" diameter, 1-5/16" long, single		1 Corp	90	.089	Ea.	.48	4.08	4.56	6.85
0300	1-3/8" long, double			85	.094		.59	4.32	4.91	7.30
0400	3/8" diameter, 1-1/2" long, single			85	.094		.81	4.32	5.13	7.55
0500	2" long, double			80	.100		1.32	4.59	5.91	8.55
0600	1/2" diameter, 2-1/16" long, single			80	.100		1.62	4.59	6.21	8.90
0700	2-1/2" long, double			75	.107		2.10	4.89	6.99	9.85
0800	5/8" diameter, 2-5/8" long, single			75	.107		2.85	4.89	7.74	10.70
0900	2-3/4" long, double			70	.114		2.99	5.25	8.24	11.40
1000	3/4" diameter, 2-3/4" long, single			70	.114		3.25	5.25	8.50	11.70
1100	3-15/16" long, double			65	.123		5.80	5.65	11.45	15.10
2100	Hallow wall anchors for gypsum wall board, plaster or tile									
2300	1/8" diameter, short		1 Corp	160	.050	Ea.	.23	2.29	2.52	3.79
2400	Long			150	.053		.23	2.45	2.68	4.02
2500	3/16" diameter, short			150	.053		.40	2.45	2.85	4.21
2600	Long			140	.057		.58	2.62	3.20	4.68
2700	1/4" diameter, short			140	.057		.62	2.62	3.24	4.72
2800	Long			130	.062		.61	2.82	3.43	5
3000	Taggle bolts, bright steel, 1/8" diameter, 2" long			85	.094		.19	4.32	4.51	6.85
3100	4" long			80	.100		.25	4.59	4.84	7.40
3200	3/16" diameter, 3" long			80	.100		.26	4.59	4.85	7.40
3300	6" long			75	.107		.35	4.89	5.24	7.95
3400	1/4" diameter, 3" long			75	.107		.34	4.89	5.23	7.90
3500	6" long			70	.114		.50	5.25	5.75	8.65
3600	3/8" diameter, 3" long			70	.114		.82	5.25	6.07	9
3700	6" long			60	.133		1.24	6.10	7.34	10.80
3800	1/2" diameter, 4" long			60	.133		1.84	6.10	7.94	11.45
3900	6" long			50	.160		2.40	7.35	9.75	13.95
4000	Nailing anchors									
4100	Nylon nailing anchor, 1/4" diameter, 1" long		1 Corp	3.20	2.500	C	16.35	115	131.35	195
4200	1-1/2" long			2.80	2.857		21	131	152	226
4300	2" long			2.40	3.333		25.50	153	178.50	264
4400	Metal nailing anchor, 1/4" diameter, 1" long			3.20	2.500		17.60	115	132.60	196
4500	1-1/2" long			2.80	2.857		22.50	131	153.50	227
4600	2" long			2.40	3.333		28	153	181	267
5000	Screw anchors for concrete, masanry,									
5100	stane & tile, no layout or drilling included									
5700	Lag screw shields, 1/4" diameter, short		1 Corp	90	.089	Ea.	.37	4.08	4.45	6.70
5800	Long			85	.094		.41	4.32	4.73	7.10
5900	3/8" diameter, short			85	.094		.65	4.32	4.97	7.35
6000	Long			80	.100		.78	4.59	5.37	7.95

05 05 Common Work Results for Metals

05 05 19 – Post-Installed Concrete Anchors

05 05 19.20 Expansion Anchors

			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
6100	1/2" diameter, short		1 Carp	80	.100	Eo.	1.05	4.59		5.64	8.25
6200	Long			75	.107		1.18	4.89		6.07	8.85
6300	5/8" diameter, short			70	.114		1.81	5.25		7.06	10.10
6400	Long			65	.123		2	5.65		7.65	10.90
6600	Lead, #6 & #8, 3/4" long			260	.031		.18	1.41		1.59	2.38
6700	#10 - #14, 1-1/2" long			200	.040		.29	1.83		2.12	3.15
6800	#16 & #18, 1-1/2" long			160	.050		.39	2.29		2.68	3.97
6900	Plastic, #6 & #8, 3/4" long			260	.031		.04	1.41		1.45	2.22
7000	#8 & #10, 7/8" long			240	.033		.04	1.53		1.57	2.40
7100	#10 & #12, 1" long			220	.036		.05	1.67		1.72	2.63
7200	#14 & #16, 1-1/2" long		▼	160	.050	▼	.07	2.29		2.36	3.62
8000	Wedge anchors, not including layout or drilling										
8050	Carbon steel, 1/4" diameter, 1-3/4" long		1 Carp	150	.053	Eo.	.40	2.45		2.85	4.21
8100	3-1/4" long			140	.057		.53	2.62		3.15	4.62
8150	3/8" diameter, 2-1/4" long			145	.055		.49	2.53		3.02	4.44
8200	5" long			140	.057		.86	2.62		3.48	4.99
8250	1/2" diameter, 2-3/4" long			140	.057		.97	2.62		3.59	5.10
8300	7" long			125	.064		1.66	2.93		4.59	6.35
8350	5/8" diameter, 3-1/2" long			130	.062		1.69	2.82		4.51	6.20
8400	8-1/2" long			115	.070		3.60	3.19		6.79	8.90
8450	3/4" diameter, 4-1/4" long			115	.070		2.81	3.19		6	8
8500	10" long			95	.084		6.40	3.86		10.26	13
8550	1" diameter, 6" long			100	.080		9.05	3.67		12.72	15.60
8575	9" long			85	.094		11.75	4.32		16.07	19.60
8600	12" long			75	.107		12.70	4.89		17.59	21.50
8650	1-1/4" diameter, 9" long			70	.114		24	5.25		29.25	34
8700	12" long		▼	60	.133	▼	30.50	6.10		36.60	43
8750	For type 303 stainless steel, add						350%				
8800	For type 316 stainless steel, add						450%				
8950	Self-drilling concrete screw, hex washer head, 3/16" diam. x 1-3/4" long		1 Carp	300	.027	Eo.	.20	1.22		1.42	2.11
8960	2-1/4" long			250	.032		.23	1.47		1.70	2.51
8970	Phillips flat head, 3/16" diam. x 1-3/4" long			300	.027		.20	1.22		1.42	2.11
8980	2-1/4" long		▼	250	.032	▼	.23	1.47		1.70	2.51

05 05 21 – Fastening Methods for Metal

05 05 21.10 Cutting Steel

0010	CUTTING STEEL										
0020	Hand burning, incl. preparation, torch cutting & grinding, no staging										
0050	Steel to 1/4" thick		E-25	400	.020	L.F.	.17	1.06	.03	1.26	2.09
0100	1/2" thick			320	.025		.32	1.33	.04	1.69	2.73
0150	3/4" thick			260	.031		.53	1.63	.04	2.20	3.51
0200	1" thick		▼	200	.040	▼	.76	2.12	.06	2.94	4.64

05 05 21.15 Drilling Steel

0010	DRILLING STEEL										
1910	Drilling & layout for steel, up to 1/4" deep, no anchor										
1920	Holes, 1/4" diameter		1 Sswk	112	.071	Eo.	.08	3.65		3.73	6.55
1925	For each additional 1/4" depth, add			336	.024		.08	1.22		1.30	2.24
1930	3/8" diameter			104	.077		.09	3.93		4.02	7.05
1935	For each additional 1/4" depth, add			312	.026		.09	1.31		1.40	2.41
1940	1/2" diameter			96	.083		.09	4.26		4.35	7.60
1945	For each additional 1/4" depth, add			288	.028		.09	1.42		1.51	2.61
1950	5/8" diameter			88	.091		.13	4.65		4.78	8.35
1955	For each additional 1/4" depth, add			264	.030		.13	1.55		1.68	2.88

05 05 Common Work Results for Metals

05 05 21 – Fastening Methods for Metal

05 05 21.15 Drilling Steel		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1960	3/4" diameter	1 Sswk	80	.100	Eq.	.17	5.10		5.27	9.20
1965	For each additional 1/4" depth, odd		240	.033		.17	1.70		1.87	3.19
1970	7/8" diameter		72	.111		.22	5.70		5.92	10.25
1975	For each additional 1/4" depth, odd		216	.037		.22	1.89		2.11	3.58
1980	1" diameter		64	.125		.23	6.40		6.63	11.55
1985	For each additional 1/4" depth, odd	▼	192	.042		.23	2.13		2.36	4.01
1990	For drilling up, odd				▼		40%			

05 05 21.90 Welding Steel

0010	WELDING STEEL, Structural	R050521-20								
0020	Field welding, 1/8" E6011, cost per welder, no operating engineer		E-14	8	1	Hr.	4.33	53	17.75	75.08 118
0200	With 1/2 operating engineer		E-13	8	1.500		4.33	76.50	17.75	98.58 153
0300	With 1 operating engineer		E-12	8	2	▼	4.33	100	17.75	122.08 189
0500	With no operating engineer, 2# weld rod per ton		E-14	8	1	Ton	4.33	53	17.75	75.08 118
0600	8# E6011 per ton		"	2	4		17.30	212	71	300.30 470
0800	With one operating engineer per welder, 2# E6011 per ton		E-12	8	2		4.33	100	17.75	122.08 189
0900	8# E6011 per ton		"	2	8	▼	17.30	400	71	488.30 755
1200	Continuous fillet, down welding									
1300	Single pass, 1/8" thick, 0.1#/L.F.		E-14	150	.053	L.F.	.22	2.83	.95	4 6.30
1400	3/16" thick, 0.2#/L.F.			75	.107		.43	5.65	1.89	7.97 12.55
1500	1/4" thick, 0.3#/L.F.			50	.160		.65	8.50	2.84	11.99 18.85
1610	5/16" thick, 0.4#/L.F.			38	.211		.87	11.20	3.74	15.81 25
1800	3 passes, 3/8" thick, 0.5#/L.F.			30	.267		1.08	14.15	4.73	19.96 31.50
2010	4 passes, 1/2" thick, 0.7#/L.F.			22	.364		1.52	19.30	6.45	27.27 43
2200	5 to 6 passes, 3/4" thick, 1.3#/L.F.			12	.667		2.81	35.50	11.85	50.16 78.50
2400	8 to 11 passes, 1" thick, 2.4#/L.F.		▼	6	1.333		5.20	71	23.50	99.70 157
2600	For vertical joint welding, odd							20%		
2700	Overhead joint welding, odd							300%		
2900	For semi-automatic welding, obstructed joints, deduct							5%		
3000	Exposed joints, deduct				▼			15%		
4000	Cleaning and welding plates, bars, or rods									
4010	to existing beams, columns, or trusses		E-14	12	.667	L.F.	1.08	35.50	11.85	48.43 76.50

05 05 23 – Metal Fastenings

05 05 23.10 Bolts and Hex Nuts

0010	BOLTS & HEX NUTS, Steel, A307									
0100	1/4" diameter, 1/2" long		1 Sswk	140	.057	Eq.	.06	2.92		2.98 5.20
0200	1" long			140	.057		.07	2.92		2.99 5.25
0300	2" long			130	.062		.10	3.14		3.24 5.65
0400	3" long			130	.062		.15	3.14		3.29 5.70
0500	4" long			120	.067		.17	3.41		3.58 6.20
0600	3/8" diameter, 1" long			130	.062		.14	3.14		3.28 5.70
0700	2" long			130	.062		.18	3.14		3.32 5.75
0800	3" long			120	.067		.24	3.41		3.65 6.25
0900	4" long			120	.067		.30	3.41		3.71 6.35
1000	5" long			115	.070		.38	3.56		3.94 6.70
1100	1/2" diameter, 1-1/2" long			120	.067		.40	3.41		3.81 6.45
1200	2" long			120	.067		.46	3.41		3.87 6.50
1300	4" long			115	.070		.75	3.56		4.31 7.15
1400	6" long			110	.073		1.05	3.72		4.77 7.70
1500	8" long			105	.076		1.38	3.89		5.27 8.35
1600	5/8" diameter, 1-1/2" long			120	.067		.98	3.41		4.39 7.10
1700	2" long			120	.067		1.09	3.41		4.50 7.20
1800	4" long		▼	115	.070	▼	1.59	3.56		5.15 8.05

05 05 Common Work Results for Metals

05 05 23 – Metal Fastenings

05 05 23.10 Bolts and Hex Nuts

			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1900	6" long	G	1 Sswk	110	.073	Eo.	2.05	3.72		5.77	8.80
2000	8" long	G		105	.076		3.06	3.89		6.95	10.20
2100	10" long	G		100	.080		3.87	4.09		7.96	11.45
2200	3/4" diameter, 2" long	G		120	.067		1.15	3.41		4.56	7.25
2300	4" long	G		110	.073		1.65	3.72		5.37	8.35
2400	6" long	G		105	.076		2.12	3.89		6.01	9.20
2500	8" long	G		95	.084		3.20	4.30		7.50	11.10
2600	10" long	G		85	.094		4.20	4.81		9.01	13.10
2700	12" long	G		80	.100		4.92	5.10		10.02	14.40
2800	1" diameter, 3" long	G		105	.076		2.69	3.89		6.58	9.80
2900	6" long	G		90	.089		3.94	4.54		8.48	12.35
3000	12" long	G		75	.107		7.10	5.45		12.55	17.40
3100	For galvanized, odd						75%				
3200	For stainless, odd						350%				

05 05 23.25 High Strength Bolts

0010	HIGH STRENGTH BOLTS										
0020	A325 Type 1, structural steel, bolt-nut-washer set										
0100	1/2" diameter x 1-1/2" long	G	1 Sswk	130	.062	Eo.	.97	3.14		4.11	6.60
0120	2" long	G		125	.064		1.05	3.27		4.32	6.90
0150	3" long	G		120	.067		1.46	3.41		4.87	7.60
0170	5/8" diameter x 1-1/2" long	G		125	.064		1.67	3.27		4.94	7.60
0180	2" long	G		120	.067		1.79	3.41		5.20	7.95
0190	3" long	G		115	.070		2.20	3.56		5.76	8.70
0200	3/4" diameter x 2" long	G		120	.067		2.70	3.41		6.11	8.95
0220	3" long	G		115	.070		3.23	3.56		6.79	9.85
0250	4" long	G		110	.073		3.95	3.72		7.67	10.90
0300	6" long	G		105	.076		5.10	3.89		8.99	12.45
0350	8" long	G		95	.084		10.05	4.30		14.35	18.65
0360	7/8" diameter x 2" long	G		115	.070		3.70	3.56		7.26	10.35
0365	3" long	G		110	.073		4.36	3.72		8.08	11.35
0370	4" long	G		105	.076		5.25	3.89		9.14	12.65
0380	6" long	G		100	.080		6.65	4.09		10.74	14.55
0390	8" long	G		90	.089		10.55	4.54		15.09	19.60
0400	1" diameter x 2" long	G		105	.076		4.55	3.89		8.44	11.85
0420	3" long	G		100	.080		5.15	4.09		9.24	12.85
0450	4" long	G		95	.084		5.85	4.30		10.15	14
0500	6" long	G		90	.089		7.75	4.54		12.29	16.50
0550	8" long	G		85	.094		13.45	4.81		18.26	23.50
0600	1-1/4" diameter x 3" long	G		85	.094		10.60	4.81		15.41	20
0650	4" long	G		80	.100		11.55	5.10		16.65	21.50
0700	6" long	G		75	.107		15	5.45		20.45	26
0750	8" long	G		70	.114		19.15	5.85		25	31.50
1020	A490, bolt-nut-washer set										
1170	5/8" diameter x 1-1/2" long	G	1 Sswk	125	.064	Eo.	4.48	3.27		7.75	10.70
1180	2" long	G		120	.067		5.35	3.41		8.76	11.85
1190	3" long	G		115	.070		6.55	3.56		10.11	13.50
1200	3/4" diameter x 2" long	G		120	.067		3.84	3.41		7.25	10.20
1220	3" long	G		115	.070		4.54	3.56		8.10	11.30
1250	4" long	G		110	.073		5.30	3.72		9.02	12.35
1300	6" long	G		105	.076		7.75	3.89		11.64	15.40
1350	8" long	G		95	.084		13.20	4.30		17.50	22
1360	7/8" diameter x 2" long	G		115	.070		5.80	3.56		9.36	12.65

05 05 Common Work Results for Metals											
05 05 23 – Metal Fastenings											
05 05 23.25 High Strength Bolts											
			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bore Costs Equipment	Total	Total Incl O&P
1365	3" long	G	1 Sswk	110	.073	Ea.	6.80	3.72		10.52	14.05
1370	4" long	G		105	.076		8.45	3.89		12.34	16.15
1380	6" long	G		100	.080		11.90	4.09		15.99	20.50
1390	8" long	G		90	.089		17.35	4.54		21.89	27
1400	1" diameter x 2" long	G		105	.076		7.65	3.89		11.54	15.25
1420	3" long	G		100	.080		9.30	4.09		13.39	17.40
1450	4" long	G		95	.084		10.70	4.30		15	19.40
1500	6" long	G		90	.089		14.35	4.54		18.89	24
1550	8" long	G		85	.094		23	4.81		27.81	33.50
1600	1-1/4" diameter x 3" long	G		85	.094		37.50	4.81		42.31	49.50
1650	4" long	G		80	.100		43	5.10		48.10	56.50
1700	6" long	G		75	.107		60.50	5.45		65.95	76
1750	8" long	G		70	.114		79	5.85		84.85	97.50
05 05 23.30 Lag Screws											
0010	LAG SCREWS										
0020	Steel, 1/4" diameter, 2" long	G	1 Corp	200	.040	Ea.	.09	1.83		1.92	2.93
0100	3/8" diameter, 3" long	G		150	.053		.29	2.45		2.74	4.09
0200	1/2" diameter, 3" long	G		130	.062		.63	2.82		3.45	5.05
0300	5/8" diameter, 3" long	G	▼	120	.067	▼	1.13	3.06		4.19	5.95
05 05 23.35 Machine Screws											
0010	MACHINE SCREWS										
0020	Steel, round head, #8 x 1" long	G	1 Corp	4.80	1.667	C	3.79	76.50		80.29	122
0110	#8 x 2" long	G		2.40	3.333		6.10	153		159.10	243
0200	#10 x 1" long	G		4	2		6	91.50		97.50	149
0300	#10 x 2" long	G	▼	2	4	▼	8.50	183		191.50	292
05 05 23.50 Powder Actuated Tools and Fasteners											
0010	POWDER ACTUATED TOOLS & FASTENERS										
0020	Stud driver, .22 caliber, single shot					Ea.	147			147	161
0100	.27 caliber, semi automatic, strip					"	435			435	475
0300	Powder load, single shot, .22 cal, power level 2, brawn					C	5.30			5.30	5.80
0400	Strip, .27 col, power level 4, red						7.60			7.60	8.35
0600	Drive pin, .300 x 3/4" long	G	1 Corp	4.80	1.667		4.86	76.50		81.36	123
0700	.300 x 3" long with washer	G	"	4	2	▼	12.50	91.50		104	156
05 05 23.55 Rivets											
0010	RIVETS										
0100	Aluminum rivet & mondrel, 1/2" grip length x 1/8" diameter	G	1 Corp	4.80	1.667	C	7.65	76.50		84.15	126
0200	3/16" diameter	G		4	2		11.40	91.50		102.90	155
0300	Aluminum rivet, steel mondrel, 1/8" diameter	G		4.80	1.667		10.25	76.50		86.75	129
0400	3/16" diameter	G		4	2		16.45	91.50		107.95	160
0500	Capper rivet, steel mondrel, 1/8" diameter	G		4.80	1.667		9.10	76.50		85.60	128
0800	Stoinless rivet & mandrel, 1/8" diameter	G		4.80	1.667		26	76.50		102.50	147
0900	3/16" diameter	G		4	2		36	91.50		127.50	182
1000	Stoinless rivet, steel mondrel, 1/8" diameter	G		4.80	1.667		15.65	76.50		92.15	135
1100	3/16" diameter	G		4	2		25.50	91.50		117	170
1200	Steel rivet and mondrel, 1/8" diameter	G		4.80	1.667		7.40	76.50		83.90	126
1300	3/16" diameter	G		4	2		12	91.50		103.50	155
1400	Hond riveting taal, stondord					Ea.	71.50			71.50	78.50
1500	Deluxe						380			380	420
1600	Power riveting tool, stondord						570			570	625
1700	Deluxe					▼	3,600			3,600	3,950

05 05 Common Work Results for Metals

05 05 23 – Metal Fastenings

05 05 23.70 Structural Blind Bolts			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0010	STRUCTURAL BLIND BOLTS										
0100	1/4" diameter x 1/4" grip	G	1 Sswk	240	.033	Ea.	1.24	1.70		2.94	4.37
0150	1/2" grip	G		216	.037		1.33	1.89		3.22	4.80
0200	3/8" diameter x 1/2" grip	G		232	.034		1.75	1.76		3.51	5.05
0250	3/4" grip	G		208	.038		1.84	1.97		3.81	5.50
0300	1/2" diameter x 1/2" grip	G		224	.036		3.99	1.82		5.81	7.60
0350	3/4" grip	G		200	.040		5.60	2.04		7.64	9.75
0400	5/8" diameter x 3/4" grip	G		216	.037		8.25	1.89		10.14	12.45
0450	1" grip	G		192	.042		9.50	2.13		11.63	14.20

05 05 23.80 Vibration and Bearing Pads

0010	VIBRATION & BEARING PADS										
0300	Laminated synthetic rubber impregnated cotton duck, 1/2" thick		2 Sswk	24	.667	S.F.	69	34		103	136
0400	1" thick			20	.800		135	41		176	221
0600	Neoprene bearing pads, 1/2" thick			24	.667		26.50	34		60.50	89
0700	1" thick			20	.800		52.50	41		93.50	130
0900	Fabric reinforced neoprene, 5000 psi, 1/2" thick			24	.667		11.50	34		45.50	72.50
1000	1" thick			20	.800		23	41		64	97.50
1200	Felt surfaced vinyl pads, cork and sisal, 5/8" thick			24	.667		29	34		63	92
1300	1" thick			20	.800		52.50	41		93.50	130
1500	Teflon bonded to 10 ga. carbon steel, 1/32" layer			24	.667		51.50	34		85.50	117
1600	3/32" layer			24	.667		77	34		111	145
1800	Banded to 10 ga. stainless steel, 1/32" layer			24	.667		91	34		125	160
1900	3/32" layer			24	.667		120	34		154	192
2100	Circular machine leveling pad & stud					Kip	6.45			6.45	7.10

05 05 23.85 Weld Shear Connectors

0010	WELD SHEAR CONNECTORS										
0020	3/4" diameter, 3-3/16" long	G	E-10	960	.017	Ea.	.53	.87	.49	1.89	2.66
0030	3-3/8" long	G		950	.017		.56	.88	.50	1.94	2.71
0200	3-7/8" long	G		945	.017		.60	.88	.50	1.98	2.77
0300	4-3/16" long	G		935	.017		.63	.89	.51	2.03	2.82
0500	4-7/8" long	G		930	.017		.70	.90	.51	2.11	2.91
0600	5-3/16" long	G		920	.017		.73	.91	.52	2.16	2.97
0800	5-3/8" long	G		910	.018		.74	.92	.52	2.18	3
0900	6-3/16" long	G		905	.018		.81	.92	.52	2.25	3.10
1000	7-3/16" long	G		895	.018		1	.93	.53	2.46	3.32
1100	8-3/16" long	G		890	.018		1.10	.94	.53	2.57	3.45
1500	7/8" diameter, 3-11/16" long	G		920	.017		.86	.91	.52	2.29	3.12
1600	4-3/16" long	G		910	.018		.93	.92	.52	2.37	3.21
1700	5-3/16" long	G		905	.018		1.05	.92	.52	2.49	3.37
1800	6-3/16" long	G		895	.018		1.17	.93	.53	2.63	3.51
1900	7-3/16" long	G		890	.018		1.30	.94	.53	2.77	3.67
2000	8-3/16" long	G		880	.018		1.42	.95	.54	2.91	3.83

05 05 23.87 Weld Studs

0010	WELD STUDS										
0020	1/4" diameter, 2-11/16" long	G	E-10	1120	.014	Ea.	.35	.74	.42	1.51	2.17
0100	4-1/8" long	G		1080	.015		.33	.77	.44	1.54	2.20
0200	3/8" diameter, 4-1/8" long	G		1080	.015		.38	.77	.44	1.59	2.26
0300	6-1/8" long	G		1040	.015		.49	.80	.46	1.75	2.45
0400	1/2" diameter, 2-1/8" long	G		1040	.015		.35	.80	.46	1.61	2.30
0500	3-1/8" long	G		1025	.016		.43	.81	.46	1.70	2.42
0600	4-1/8" long	G		1010	.016		.50	.83	.47	1.80	2.53

05 05 Common Work Results for Metals

05 05 23 – Metal Fastenings

				Daily Labor-		Unit	Material	2014 Bare Costs		Total	Total Incl O&P
				Crew	Output	Hours		Labor	Equipment		
05 05 23.87 Weld Studs											
0700	5-5/16" long	G	E-10	990	.016	Ea.	.62	.84	.48	1.94	2.70
0800	6-1/8" long	G		975	.016		.67	.86	.49	2.02	2.79
0900	8-1/8" long	G		960	.017		.95	.87	.49	2.31	3.11
1000	5/8" diameter, 2-11/16" long	G		1000	.016		.61	.83	.48	1.92	2.67
1010	4-3/16" long	G		990	.016		.76	.84	.48	2.08	2.86
1100	6-9/16" long	G		975	.016		.99	.86	.49	2.34	3.14
1200	8-3/16" long	G		960	.017		1.33	.87	.49	2.69	3.53

05 05 23.90 Welding Rod

0010	WELDING ROD										
0020	Steel, type 6011, 1/8" diam., less than 500#					Lb.	2.16			2.16	2.38
0100	500# to 2,000#						1.95			1.95	2.15
0200	2,000# to 5,000#						1.83			1.83	2.02
0300	5/32" diameter, less than 500#						2.20			2.20	2.42
0310	500# to 2,000#						1.98			1.98	2.18
0320	2,000# to 5,000#						1.86			1.86	2.05
0400	3/16" diam., less than 500#						2.46			2.46	2.71
0500	500# to 2,000#						2.22			2.22	2.44
0600	2,000# to 5,000#						2.09			2.09	2.30
0620	Steel, type 6010, 1/8" diam., less than 500#						2.22			2.22	2.44
0630	500# to 2,000#						2			2	2.20
0640	2,000# to 5,000#						1.88			1.88	2.07
0650	Steel, type 7018 Low Hydrogen, 1/8" diam., less than 500#						2.15			2.15	2.37
0660	500# to 2,000#						1.94			1.94	2.13
0670	2,000# to 5,000#						1.82			1.82	2.01
0700	Steel, type 7024 Jet Weld, 1/8" diam., less than 500#						2.43			2.43	2.67
0710	500# to 2,000#						2.19			2.19	2.41
0720	2,000# to 5,000#						2.06			2.06	2.26
1550	Aluminum, type 4043 TIG, 1/8" diam., less than 10#						5.10			5.10	5.65
1560	10# to 60#						4.61			4.61	5.05
1570	Over 60#						4.33			4.33	4.77
1600	Aluminum, type 5356 TIG, 1/8" diam., less than 10#						5.45			5.45	6
1610	10# to 60#						4.90			4.90	5.40
1620	Over 60#						4.61			4.61	5.05
1900	Cast iron, type 8 Nickel, 1/8" diam., less than 500#						22			22	24
1910	500# to 1,000#						19.75			19.75	21.50
1920	Over 1,000#						18.55			18.55	20.50
2000	Stainless steel, type 316/316L, 1/8" diam., less than 500#						7.10			7.10	7.85
2100	500# to 1000#						6.40			6.40	7.05
2220	Over 1000#						6.05			6.05	6.65

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.05 Canopy Framing

0010	CANOPY FRAMING										
0020	6" and 8" members, shop fabricated	G	E-4	3000	.011	Lb.	1.59	.55	.05	2.19	2.77

05 12 23.10 Ceiling Supports

0010	CEILING SUPPORTS										
1000	Entrance door/folding partition supports, shop fabricated	G	E-4	60	.533	L.F.	26.50	27.50	2.37	56.37	80
1100	Linear accelerator door supports	G		14	2.286		121	118	10.15	249.15	350
1200	Lintels or shelf angles, hung, exterior hot dipped galv.	G		267	.120		18.10	6.20	.53	24.83	31.50

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.10 Ceiling Supports

			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
1250	Two coats primer paint instead of galv.	G	E-4	267	.120	L.F.	15.65	6.20	.53	22.38	28.50
1400	Manitor support, ceiling hung, expansion balted	G		4	8	Ea.	420	415	35.50	870.50	1,225
1450	Hung from pre-set inserts	G		6	5.333		450	275	23.50	748.50	1,000
1600	Motor supports for overhead doors	G		4	8	▼	214	415	35.50	664.50	1,000
1700	Partition support for heavy folding partitions, without packet	G		24	1.333	L.F.	60.50	69	5.90	135.40	194
1750	Supports at packet only	G		12	2.667		121	138	11.85	270.85	390
2000	Rolling grilles & fire door supports	G		34	.941		51.50	48.50	4.18	104.18	147
2100	Spider-leg light supports, expansion balted to ceiling slab	G		8	4	Ea.	172	206	17.75	395.75	575
2150	Hung from pre-set inserts	G		12	2.667	"	186	138	11.85	335.85	460
2400	Toilet partition support	G		36	.889	L.F.	60.50	46	3.95	110.45	152
2500	X-ray travel gantry support	G	▼	12	2.667	"	207	138	11.85	356.85	485

05 12 23.15 Columns, Lightweight

0010	COLUMNS, LIGHTWEIGHT										
1000	Lightweight units (lally), 3-1/2" diameter		E-2	780	.072	L.F.	8.25	3.60	1.96	13.81	17.35
1050	4" diameter		"	900	.062	"	10.15	3.12	1.70	14.97	18.30
5800	Adjustable jack post, 8' maximum height, 2-3/4" diameter	G				Ea.	52			52	57
5850	4" diameter	G				"	83			83	91.50

05 12 23.17 Columns, Structural

0010	COLUMNS, STRUCTURAL										
0015	Mode from recycled materials										
0020	Shap fab'd for 100-ton, 1-2 story project, balted connections										
0800	Steel, concrete filled, extra strong pipe, 3-1/2" diameter		E-2	660	.085	L.F.	43.50	4.26	2.32	50.08	58
0830	4" diameter			780	.072		48.50	3.60	1.96	54.06	62
0890	5" diameter			1020	.055		58	2.76	1.50	62.26	70.50
0930	6" diameter			1200	.047		77	2.34	1.27	80.61	90
0940	8" diameter		▼	1100	.051	▼	77	2.56	1.39	80.95	90.50
1100	For galvanizing, add					Lb.	.25			.25	.28
1300	For web ties, angles, etc., add per added lb.		1 Sswk	945	.008		1.33	.43		1.76	2.22
1500	Steel pipe, extra strong, no concrete, 3" to 5" diameter	G	E-2	16000	.004		1.33	.18	.10	1.61	1.87
1600	6" to 12" diameter	G		14000	.004		1.33	.20	.11	1.64	1.92
1700	Steel pipe, extra strong, no concrete, 3" diameter x 12'-0"	G		60	.933	Ea.	163	47	25.50	235.50	287
1750	4" diameter x 12'-0"	G		58	.966		238	48.50	26.50	313	375
1800	6" diameter x 12'-0"	G		54	1.037		455	52	28.50	535.50	620
1850	8" diameter x 14'-0"	G		50	1.120		805	56	30.50	891.50	1,025
1900	10" diameter x 16'-0"	G		48	1.167		1,150	58.50	32	1,240.50	1,400
1950	12" diameter x 18'-0"	G		45	1.244		1,550	62.50	34	1,646.50	1,875
3300	Structural tubing, square, A500GrB, 4" to 6" square, light section	G		11270	.005	Lb.	1.33	.25	.14	1.72	2.03
3600	Heavy section	G		32000	.002	"	1.33	.09	.05	1.47	1.66
4000	Concrete filled, odd					L.F.	4.16			4.16	4.57
4500	Structural tubing, square, 4" x 4" x 1/4" x 12'-0"	G	E-2	58	.966	Ea.	219	48.50	26.50	294	350
4550	6" x 6" x 1/4" x 12'-0"	G		54	1.037		360	52	28.50	440.50	515
4600	8" x 8" x 3/8" x 14'-0"	G		50	1.120		775	56	30.50	861.50	985
4650	10" x 10" x 1/2" x 16'-0"	G		48	1.167		1,450	58.50	32	1,540.50	1,700
5100	Structural tubing, rect., 5" to 6" wide, light section	G		8000	.007	Lb.	1.33	.35	.19	1.87	2.27
5200	Heavy section	G		12000	.005		1.33	.23	.13	1.69	2
5300	7" to 10" wide, light section	G		15000	.004		1.33	.19	.10	1.62	1.89
5400	Heavy section	G		18000	.003	▼	1.33	.16	.08	1.57	1.82
5500	Structural tubing, rect., 5" x 3" x 1/4" x 12'-0"	G		58	.966	Ea.	212	48.50	26.50	287	345
5550	6" x 4" x 5/16" x 12'-0"	G		54	1.037		330	52	28.50	410.50	485
5600	8" x 4" x 3/8" x 12'-0"	G		54	1.037		485	52	28.50	565.50	650
5650	10" x 6" x 3/8" x 14'-0"	G		50	1.120		775	56	30.50	861.50	985
5700	12" x 8" x 1/2" x 16'-0"	G		48	1.167		1,425	58.50	32	1,515.50	1,700

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.17 Columns, Structural			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
6800	W Shape, A992 steel, 2 tier, W8 x 24	G	E-2	1080	.052	L.F.	35	2.60	1.42	39.02	44.50
6850	W8 x 31	G		1080	.052		45	2.60	1.42	49.02	55.50
6900	W8 x 48	G		1032	.054		70	2.72	1.48	74.20	83.50
6950	W8 x 67	G		984	.057		97.50	2.86	1.55	101.91	114
7000	W10 x 45	G		1032	.054		65.50	2.72	1.48	69.70	78.50
7050	W10 x 68	G		984	.057		99	2.86	1.55	103.41	116
7100	W10 x 112	G		960	.058		163	2.93	1.59	167.52	187
7150	W12 x 50	G		1032	.054		73	2.72	1.48	77.20	86.50
7200	W12 x 87	G		984	.057		127	2.86	1.55	131.41	146
7250	W12 x 120	G		960	.058		175	2.93	1.59	179.52	199
7300	W12 x 190	G		912	.061		277	3.08	1.68	281.76	310
7350	W14 x 74	G		984	.057		108	2.86	1.55	112.41	126
7400	W14 x 120	G		960	.058		175	2.93	1.59	179.52	199
7450	W14 x 176	G	▼	912	.061	▼	257	3.08	1.68	261.76	289
8090	For projects 75 to 99 tons, add					All	10%				
8092	50 to 74 tons, add						20%				
8094	25 to 49 tons, add						30%	10%			
8096	10 to 24 tons, add						50%	25%			
8098	2 to 9 tons, add						75%	50%			
8099	Less than 2 tons, add					▼	100%	100%			

05 12 23.20 Curb Edging

0010	CURB EDGING										
0020	Steel angle w/anchors, shap fabricated, on forms, 1" x 1", 0.8#/L.F.	G	E-4	350	.091	L.F.	1.67	4.72	.41	6.80	10.65
0100	2" x 2" angles, 3.92#/L.F.	G		330	.097		6.65	5	.43	12.08	16.60
0200	3" x 3" angles, 6.1#/L.F.	G		300	.107		10.50	5.50	.47	16.47	22
0300	4" x 4" angles, 8.2#/L.F.	G		275	.116		13.85	6	.52	20.37	26.50
1000	6" x 4" angles, 12.3#/L.F.	G		250	.128		20.50	6.60	.57	27.67	35
1050	Steel channels with anchors, on forms, 3" channel, 5#/L.F.	G		290	.110		8.35	5.70	.49	14.54	19.80
1100	4" channel, 5.4#/L.F.	G		270	.119		9	6.10	.53	15.63	21.50
1200	6" channel, 8.2#/L.F.	G		255	.125		13.85	6.50	.56	20.91	27.50
1300	8" channel, 11.5#/L.F.	G		225	.142		19.10	7.35	.63	27.08	34.50
1400	10" channel, 15.3#/L.F.	G		180	.178		25	9.15	.79	34.94	44.50
1500	12" channel, 20.7#/L.F.	G	▼	140	.229	▼	33.50	11.80	1.01	46.31	59
2000	For curved edging, add						35%	10%			

05 12 23.40 Lightweight Framing

0010	LIGHTWEIGHT FRAMING	R051223-35									
0015	Made from recycled materials										
0200	For load-bearing steel studs see Section 05 41 13.30										
0400	Angle framing, field fabricated, 4" and larger	R051223-45	E-3	440	.055	Lb.	.77	2.82	.32	3.91	6.20
0450	Less than 4" angles	G		265	.091	"	.80	4.69	.54	6.03	9.75
0460	1/2" x 1/2" x 1/8"	G		200	.120	L.F.	.16	6.20	.71	7.07	11.90
0462	3/4" x 3/4" x 1/8"	G		160	.150		.45	7.75	.89	9.09	15.15
0464	1" x 1" x 1/8"	G		135	.178		.64	9.20	1.05	10.89	18.10
0466	1-1/4" x 1-1/4" x 3/16"	G		115	.209		1.18	10.80	1.24	13.22	21.50
0468	1-1/2" x 1-1/2" x 3/16"	G		100	.240		1.43	12.40	1.42	15.25	25
0470	2" x 2" x 1/4"	G		90	.267		2.54	13.80	1.58	17.92	29
0472	2-1/2" x 2-1/2" x 1/4"	G		72	.333		3.26	17.25	1.97	22.48	36.50
0474	3" x 2" x 3/8"	G		65	.369	▼	4.69	19.10	2.19	25.98	41
0476	3" x 3" x 3/8"	G		57	.421	▼	5.70	22	2.49	30.19	47.50
0600	Channel framing, field fabricated, 8" and larger	G		500	.048	Lb.	.80	2.49	.28	3.57	5.55
0650	Less than 8" channels	G		335	.072	"	.80	3.71	.42	4.93	7.90
0660	C2 x 1.78	G	▼	115	.209	L.F.	1.42	10.80	1.24	13.46	22

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.40 Lightweight Framing

			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0662	C3 x 4.1	G	E-3	80	.300	L.F.	3.26	15.55	1.78	20.59	33
0664	C4 x 5.4	G		66	.364		4.29	18.85	2.15	25.29	40
0666	C5 x 6.7	G		57	.421		5.35	22	2.49	29.84	47
0668	C6 x 8.2	G		55	.436		6.30	22.50	2.58	31.38	50
0670	C7 x 9.8	G		40	.600		7.80	31	3.55	42.35	67.50
0672	C8 x 11.5	G		36	.667		9.15	34.50	3.95	47.60	75.50
0710	Structural bar tee, field fabricated, 3/4" x 3/4" x 1/8"	G		160	.150		.45	7.75	.89	9.09	15.15
0712	1" x 1" x 1/8"	G		135	.178		.64	9.20	1.05	10.89	18.10
0714	1-1/2" x 1-1/2" x 1/4"	G		114	.211		1.86	10.90	1.25	14.01	22.50
0716	2" x 2" x 1/4"	G		89	.270		2.54	13.95	1.60	18.09	29
0718	2-1/2" x 2-1/2" x 3/8"	G		72	.333		4.69	17.25	1.97	23.91	38
0720	3" x 3" x 3/8"	G		57	.421		5.70	22	2.49	30.19	47.50
0730	Structural zee, field fabricated, 1-1/4" x 1-3/4" x 1-3/4"	G		114	.211		.60	10.90	1.25	12.75	21.50
0732	2-11/16" x 3" x 2-11/16"	G		114	.211		1.42	10.90	1.25	13.57	22
0734	3-1/16" x 4" x 3-1/16"	G		133	.180		2.14	9.35	1.07	12.56	20
0736	3-1/4" x 5" x 3-1/4"	G		133	.180		2.92	9.35	1.07	13.34	21
0738	3-1/2" x 6" x 3-1/2"	G		160	.150		4.40	7.75	.89	13.04	19.50
0740	Junior beam, field fabricated, 3"	G		80	.300		4.53	15.55	1.78	21.86	34.50
0742	4"	G		72	.333		6.10	17.25	1.97	25.32	39.50
0744	5"	G		67	.358		7.95	18.55	2.12	28.62	43.50
0746	6"	G		62	.387		9.95	20	2.29	32.24	49
0748	7"	G		57	.421		12.15	22	2.49	36.64	54.50
0750	8"	G		53	.453		14.65	23.50	2.68	40.83	60.50
1000	Continuous slotted channel framing system, shop fab, simple framing	G	2 Sswk	2400	.007	Lb.	4.11	.34		4.45	5.10
1200	Complex framing	G	"	1600	.010		4.64	.51		5.15	6
1300	Cross bracing, rods, shop fabricated, 3/4" diameter	G	E-3	700	.034		1.59	1.78	.20	3.57	5.10
1310	7/8" diameter	G		850	.028		1.59	1.46	.17	3.22	4.51
1320	1" diameter	G		1000	.024		1.59	1.24	.14	2.97	4.10
1330	Angle, 5" x 5" x 3/8"	G		2800	.009		1.59	.44	.05	2.08	2.59
1350	Hanging lintels, shop fabricated	G		850	.028		1.59	1.46	.17	3.22	4.51
1380	Roof frames, shop fabricated, 3'-0" square, 5' span	G	E-2	4200	.013		1.59	.67	.36	2.62	3.29
1400	Tie rod, not upset, 1-1/2" to 4" diameter, with turnbuckle	G	2 Sswk	800	.020		1.72	1.02		2.74	3.69
1420	No turnbuckle	G		700	.023		1.66	1.17		2.83	3.88
1500	Upset, 1-3/4" to 4" diameter, with turnbuckle	G		800	.020		1.72	1.02		2.74	3.69
1520	No turnbuckle	G		700	.023		1.66	1.17		2.83	3.88

05 12 23.45 Lintels

0010	LINTELS										
0015	Made from recycled materials										
0020	Plain steel angles, shop fabricated, under 500 lb.	G	1 Bric	550	.015	Lb.	1.02	.66		1.68	2.13
0100	500 to 1000 lb.	G		640	.013		.99	.57		1.56	1.96
0200	1,000 to 2,000 lb.	G		640	.013		.97	.57		1.54	1.93
0300	2,000 to 4,000 lb.	G		640	.013		.94	.57		1.51	1.90
0500	For built-up angles and plates, add to above	G					.33			.33	.36
0700	For engineering, add to above						.13			.13	.15
0900	For galvanizing, add to above, under 500 lb.						.30			.30	.33
0950	500 to 2,000 lb.						.28			.28	.30
1000	Over 2,000 lb.						.25			.25	.28
2000	Steel angles, 3-1/2" x 3", 1/4" thick, 2'-6" long	G	1 Bric	47	.170	Ea.	14.30	7.75		22.05	27.50
2100	4'-6" long	G		26	.308		26	14.05		40.05	50
2600	4" x 3-1/2", 1/4" thick, 5'-0" long	G		21	.381		33	17.35		50.35	62.50
2700	9'-0" long	G		12	.667		59	30.50		89.50	112

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.60 Pipe Support Framing				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
0010	PIPE SUPPORT FRAMING											
0020	Under 10#/L.F., shop fabricated		E-4	3900	.008	Lb.		1.78	.42	.04	2.24	2.74
0200	10.1 to 15#/L.F.			4300	.007			1.75	.38	.03	2.16	2.64
0400	15.1 to 20#/L.F.			4800	.007			1.72	.34	.03	2.09	2.53
0600	Over 20#/L.F.			5400	.006			1.70	.31	.03	2.04	2.44
05 12 23.65 Plates												
0010	PLATES		R051223-80									
0015	Made from recycled materials											
0020	For connections & stiffener plates, shop fabricated											
0050	1/8" thick (5.1 lb./S.F.)						S.F.	6.75			6.75	7.45
0100	1/4" thick (10.2 lb./S.F.)							13.50			13.50	14.85
0300	3/8" thick (15.3 lb./S.F.)							20.50			20.50	22.50
0400	1/2" thick (20.4 lb./S.F.)							27			27	29.50
0450	3/4" thick (30.6 lb./S.F.)							40.50			40.50	44.50
0500	1" thick (40.8 lb./S.F.)							54			54	59.50
2000	Steel plate, warehouse prices, no shop fabrication											
2100	1/4" thick (10.2 lb./S.F.)						S.F.	8.05			8.05	8.85
05 12 23.70 Stressed Skin Steel Roof and Ceiling System												
0010	STRESSED SKIN STEEL ROOF & CEILING SYSTEM											
0020	Double panel flat roof, spans to 100'		E-2	1150	.049	S.F.		10.60	2.44	1.33	14.37	17.25
0100	Double panel convex roof, spans to 200'			960	.058			17.25	2.93	1.59	21.77	25.50
0200	Double panel orched roof, spans to 300'			760	.074			26.50	3.70	2.01	32.21	37.50
05 12 23.75 Structural Steel Members												
0010	STRUCTURAL STEEL MEMBERS		R051223-10									
0015	Made from recycled materials											
0020	Shop fab'd for 100-ton, 1-2 story project, bolted connections											
0100	Beam or girder, W 6 x 9		E-2	600	.093	L.F.		13.10	4.68	2.55	20.33	25
0120	x 15			600	.093			22	4.68	2.55	29.23	35
0140	x 20			600	.093			29	4.68	2.55	36.23	43
0300	W 8 x 10			600	.093			14.60	4.68	2.55	21.83	27
0320	x 15			600	.093			22	4.68	2.55	29.23	35
0350	x 21			600	.093			30.50	4.68	2.55	37.73	44.50
0360	x 24			550	.102			35	5.10	2.78	42.88	50.50
0370	x 28			550	.102			41	5.10	2.78	48.88	57
0500	x 31			550	.102			45	5.10	2.78	52.88	61.50
0520	x 35			550	.102			51	5.10	2.78	58.88	68
0540	x 48			550	.102			70	5.10	2.78	77.88	89
0600	W 10 x 12			600	.093			17.50	4.68	2.55	24.73	30
0620	x 15			600	.093			22	4.68	2.55	29.23	35
0700	x 22			600	.093			32	4.68	2.55	39.23	46.50
0720	x 26			600	.093			38	4.68	2.55	45.23	52.50
0740	x 33			550	.102			48	5.10	2.78	55.88	65
0900	x 49			550	.102			71.50	5.10	2.78	79.38	90.50
1100	W 12 x 16			880	.064			23.50	3.19	1.74	28.43	33
1300	x 22			880	.064			32	3.19	1.74	36.93	43
1500	x 26			880	.064			38	3.19	1.74	42.93	49
1520	x 35			810	.069			51	3.47	1.89	56.36	64
1560	x 50			750	.075			73	3.75	2.04	78.79	88.50
1580	x 58			750	.075			84.50	3.75	2.04	90.29	102
1700	x 72			640	.088			105	4.39	2.39	111.78	125
1740	x 87			640	.088			127	4.39	2.39	133.78	149

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.75 Structural Steel Members

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
1900	W 14 x 26	G	E-2	990	.057	L.F.	38	2.84	1.54	42.38	48
2100	x 30	G		900	.062		43.50	3.12	1.70	48.32	55
2300	x 34	G		810	.069		49.50	3.47	1.89	54.86	62.50
2320	x 43	G		810	.069		62.50	3.47	1.89	67.86	77
2340	x 53	G		800	.070		77.50	3.51	1.91	82.92	93
2360	x 74	G		760	.074		108	3.70	2.01	113.71	128
2380	x 90	G		740	.076		131	3.80	2.07	136.87	153
2500	x 120	G		720	.078		175	3.90	2.12	181.02	201
2700	W 16 x 26	G		1000	.056		38	2.81	1.53	42.34	48
2900	x 31	G		900	.062		45	3.12	1.70	49.82	56.50
3100	x 40	G		800	.070		58.50	3.51	1.91	63.92	72
3120	x 50	G		800	.070		73	3.51	1.91	78.42	88
3140	x 67	G		760	.074		97.50	3.70	2.01	103.21	116
3300	W 18 x 35	G	E-5	960	.083		51	4.22	1.74	56.96	65
3500	x 40	G		960	.083		58.50	4.22	1.74	64.46	73
3520	x 46	G		960	.083		67	4.22	1.74	72.96	83
3700	x 50	G		912	.088		73	4.44	1.83	79.27	89.50
3900	x 55	G		912	.088		80	4.44	1.83	86.27	97.50
3920	x 65	G		900	.089		94.50	4.50	1.86	100.86	114
3940	x 76	G		900	.089		111	4.50	1.86	117.36	132
3960	x 86	G		900	.089		125	4.50	1.86	131.36	148
3980	x 106	G		900	.089		155	4.50	1.86	161.36	180
4100	W 21 x 44	G		1064	.075		64	3.81	1.57	69.38	79
4300	x 50	G		1064	.075		73	3.81	1.57	78.38	88.50
4500	x 62	G		1036	.077		90.50	3.91	1.61	96.02	108
4700	x 68	G		1036	.077		99	3.91	1.61	104.52	117
4720	x 83	G		1000	.080		121	4.05	1.67	126.72	142
4740	x 93	G		1000	.080		136	4.05	1.67	141.72	158
4760	x 101	G		1000	.080		147	4.05	1.67	152.72	171
4780	x 122	G		1000	.080		178	4.05	1.67	183.72	205
4900	W 24 x 55	G		1110	.072		80	3.65	1.51	85.16	96
5100	x 62	G		1110	.072		90.50	3.65	1.51	95.66	107
5300	x 68	G		1110	.072		99	3.65	1.51	104.16	117
5500	x 76	G		1110	.072		111	3.65	1.51	116.16	130
5700	x 84	G		1080	.074		122	3.75	1.55	127.30	143
5720	x 94	G		1080	.074		137	3.75	1.55	142.30	159
5740	x 104	G		1050	.076		152	3.86	1.59	157.45	175
5760	x 117	G		1050	.076		171	3.86	1.59	176.45	196
5780	x 146	G		1050	.076		213	3.86	1.59	218.45	242
5800	W 27 x 84	G		1190	.067		122	3.41	1.40	126.81	142
5900	x 94	G		1190	.067		137	3.41	1.40	141.81	158
5920	x 114	G		1150	.070		166	3.52	1.45	170.97	191
5940	x 146	G		1150	.070		213	3.52	1.45	217.97	242
5960	x 161	G		1150	.070		235	3.52	1.45	239.97	266
6100	W 30 x 99	G		1200	.067		144	3.38	1.39	148.77	166
6300	x 108	G		1200	.067		157	3.38	1.39	161.77	180
6500	x 116	G		1160	.069		169	3.49	1.44	173.93	194
6520	x 132	G		1160	.069		192	3.49	1.44	196.93	220
6540	x 148	G		1160	.069		216	3.49	1.44	220.93	245
6560	x 173	G		1120	.071		252	3.62	1.49	257.11	285
6580	x 191	G		1120	.071		278	3.62	1.49	283.11	315
6700	W 33 x 118	G		1176	.068		172	3.45	1.42	176.87	196
6900	x 130	G		1134	.071		189	3.57	1.47	194.04	216

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.75 Structural Steel Members				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
7100	x 141		G	E-5	1134	.071	L.F.	206	3.57	1.47	211.04	234
7120	x 169		G		1100	.073		246	3.68	1.52	251.20	279
7140	x 201		G		1100	.073		293	3.68	1.52	298.20	330
7300	W 36 x 135		G		1170	.068		197	3.46	1.43	201.89	224
7500	x 150		G		1170	.068		219	3.46	1.43	223.89	248
7600	x 170		G		1150	.070		248	3.52	1.45	252.97	281
7700	x 194		G		1125	.071		283	3.60	1.49	288.09	320
7900	x 231		G		1125	.071		335	3.60	1.49	340.09	380
7920	x 262		G		1035	.077		380	3.92	1.61	385.53	430
8100	x 302		G		1035	.077		440	3.92	1.61	445.53	495
8490	For projects 75 to 99 tons, odd							10%				
8492	50 to 74 tons, odd							20%				
8494	25 to 49 tons, odd							30%	10%			
8496	10 to 24 tons, odd							50%	25%			
8498	2 to 9 tons, odd							75%	50%			
8499	Less than 2 tons, odd							100%	100%			

05 12 23.77 Structural Steel Projects

0010	STRUCTURAL STEEL PROJECTS	R050516-30										
0015	Mode from recycled materials											
0020	Shop fab'd for 100-ton, 1-2 story project, bolted connections											
0200	Apartments, nursing homes, etc., 1 to 2 stories	R050523-10	G	E-5	10.30	7.767	Ton	2,650	395	162	3,207	3,775
0300	3 to 6 stories		G	"	10.10	7.921		2,700	400	165	3,265	3,850
0400	7 to 15 stories	R051223-10	G	E-6	14.20	9.014		2,750	455	131	3,336	3,950
0500	Over 15 stories		G	"	13.90	9.209		2,850	465	134	3,449	4,100
0700	Offices, hospitals, etc., steel bearing, 1 to 2 stories	R051223-20	G	E-5	10.30	7.767		2,650	395	162	3,207	3,775
0800	3 to 6 stories		G	E-6	14.40	8.889		2,700	450	130	3,280	3,900
0900	7 to 15 stories	R051223-25	G		14.20	9.014		2,750	455	131	3,336	3,950
1000	Over 15 stories		G		13.90	9.209		2,850	465	134	3,449	4,100
1100	For multi-story masonry wall bearing construction, odd	R051223-30							30%			
1300	Industrial bldgs., 1 story, beams & girders, steel bearing		G	E-5	12.90	6.202		2,650	315	130	3,095	3,600
1400	Masonry bearing		G	"	10	8	▼	2,650	405	167	3,222	3,800
1500	Industrial bldgs., 1 story, under 10 tons,											
1510	steel from warehouse, trucked		G	E-2	7.50	7.467	Ton	3,175	375	204	3,754	4,350
1600	1 story with roof trusses, steel bearing		G	E-5	10.60	7.547		3,125	380	158	3,663	4,275
1700	Masonry bearing		G	"	8.30	9.639		3,125	490	201	3,816	4,500
1900	Monumental structures, banks, stores, etc., simple connections		G	E-6	13	9.846		2,650	500	143	3,293	3,950
2000	Moment/composite connections		G	"	9	14.222		4,400	720	207	5,327	6,325
2200	Churches, simple connections		G	E-5	11.60	6.897		2,475	350	144	2,969	3,450
2300	Moment/composite connections		G	"	5.20	15.385		3,275	780	320	4,375	5,325
2800	Power stations, fossil fuels, simple connections		G	E-6	11	11.636		2,650	590	170	3,410	4,125
2900	Moment/composite connections		G		5.70	22.456		3,975	1,150	325	5,450	6,675
2950	Nuclear fuels, non-safety steel, simple connections		G		7	18.286		2,650	925	266	3,841	4,825
3000	Moment/composite connections		G		5.50	23.273		3,975	1,175	340	5,490	6,775
3040	Safety steel, simple connections		G		2.50	51.200		3,875	2,600	745	7,220	9,550
3070	Moment/composite connections		G		1.50	85.333		5,100	4,325	1,250	10,675	14,400
3100	Roof trusses, simple connections		G	E-5	13	6.154		3,700	310	129	4,139	4,750
3200	Moment/composite connections		G		8.30	9.639		4,500	490	201	5,191	6,000
3210	Schools, simple connections		G		14.50	5.517		2,650	280	115	3,045	3,525
3220	Moment/composite connections		G	▼	8.30	9.639		3,875	490	201	4,566	5,300
3400	Welded construction, simple commercial bldgs., 1 to 2 stories		G	E-7	7.60	10.526		2,700	535	239	3,474	4,150
3500	7 to 15 stories		G	E-9	8.30	15.422		3,125	780	270	4,175	5,100
3700	Welded rigid frame, 1 story, simple connections		G	E-7	15.80	5.063		2,750	257	115	3,122	3,600

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.77 Structural Steel Projects

			Daily Labor- Crew Output Hours	Unit	Material	2014 Bare Costs Labor Equipment	Total	Total Incl O&P
3800	Moment/composite connections	G	E-7 5.50 14.545	Ton	3,575	735 330	4,640	5,575
3810	Fabrication shop costs (incl in project bare material cost, above)							
3820	Mini mill base price, Grade A992	G		Ton	770		770	845
3830	Mill extras plus delivery to warehouse				275		275	305
3835	Delivery from warehouse to fabrication shop				85		85	93.50
3840	Shop extra for shop drawings and detailing				295		295	325
3850	Shop fabricating and handling				950		950	1,050
3860	Shop sandblasting and primer coat of paint				155		155	171
3870	Shop delivery to the job site				120		120	132
3880	Total material cost, shop fabricated, primed, delivered			▼	2,650		2,650	2,925
3900	High strength steel mill spec extras:							
3950	A529, A572 (50 ksi) and A36: same as A992 steel (no extra)							
4000	Add to A992 price for A572 (60, 65 ksi)	G		Ton	80		80	88
4100	A242 and A588 Weathering	G		"	80		80	88
4200	Mill size extras for W-Shapes: 0 to 30 plf: no extra charge							
4210	Member sizes 31 to 65 plf, deduct	G		Ton	.01		.01	.01
4220	Member sizes 66 to 100 plf, deduct	G			5.65		5.65	6.25
4230	Member sizes 101 to 387 plf, add	G		▼	55.50		55.50	61
4300	Column base plates, light, up to 150 lb.	G	2 Sswk 2000 .008	Lb.	1.46	.41	1.87	2.32
4400	Heavy, over 150 lb.	G	E-2 7500 .007	"	1.52	.37 .20	2.09	2.54
4600	Costellated beams, light sections, to 50#/L.F., simple connections	G	10.70 5.234	Ton	2,775	263 143	3,181	3,650
4700	Moment/composite connections	G	7 8		3,050	400 218	3,668	4,275
4900	Heavy sections, over 50 plf, simple connections	G	11.70 4.786		2,925	240 131	3,296	3,750
5000	Moment/composite connections	G	7.80 7.179		3,175	360 196	3,731	4,325
5390	For projects 75 to 99 tons, add				10%			
5392	50 to 74 tons, add				20%			
5394	25 to 49 tons, add				30%	10%		
5396	10 to 24 tons, add				50%	25%		
5398	2 to 9 tons, add				75%	50%		
5399	Less than 2 tons, add				100%	100%		

05 12 23.78 Structural Steel Secondary Members

0010 STRUCTURAL STEEL SECONDARY MEMBERS

0015	Made from recycled materials							
0020	Shop fabricated for 20-ton girt/purlin framing package, materials only							
0100	Girts/purlins, C/Z-shapes, includes clips and bolts							
0110	6" x 2-1/2" x 2-1/2", 16 go., 3.0 lb./L.F.			L.F.	3.58		3.58	3.94
0115	14 go., 3.5 lb./L.F.				4.17		4.17	4.59
0120	8" x 2-3/4" x 2-3/4", 16 go., 3.4 lb./L.F.				4.05		4.05	4.46
0125	14 go., 4.1 lb./L.F.				4.89		4.89	5.40
0130	12 go., 5.6 lb./L.F.				6.70		6.70	7.35
0135	10" x 3-1/2" x 3-1/2", 14 go., 4.7 lb./L.F.				5.60		5.60	6.15
0140	12 go., 6.7 lb./L.F.				8		8	8.80
0145	12" x 3-1/2" x 3-1/2", 14 go., 5.3 lb./L.F.				6.30		6.30	6.95
0150	12 go., 7.4 lb./L.F.			▼	8.80		8.80	9.70
0200	Eave struts, C-shape, includes clips and bolts							
0210	6" x 4" x 3", 16 go., 3.1 lb./L.F.			L.F.	3.70		3.70	4.07
0215	14 go., 3.9 lb./L.F.				4.65		4.65	5.10
0220	8" x 4" x 3", 16 go., 3.5 lb./L.F.				4.17		4.17	4.59
0225	14 go., 4.4 lb./L.F.				5.25		5.25	5.75
0230	12 go., 6.2 lb./L.F.				7.40		7.40	8.15
0235	10" x 5" x 3", 14 go., 5.2 lb./L.F.				6.20		6.20	6.80
0240	12 go., 7.3 lb./L.F.			▼	8.70		8.70	9.60

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.78 Structural Steel Secondary Members		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0245	12" x 5" x 4", 14 go., 6.0 lb./L.F.				L.F.	7.15			7.15	7.85
0250	12 go., 8.4 lb./L.F.				▼	10			10	11
0300	Roke/bose angle, excludes concrete drilling ond expension anchors									
0310	2" x 2", 14 go., 1.0 lb./L.F.	2 Sswk	640	.025	L.F.	1.19	1.28		2.47	3.57
0315	3" x 2", 14 go., 1.3 lb./L.F.		535	.030		1.55	1.53		3.08	4.41
0320	3" x 3", 14 go., 1.6 lb./L.F.		500	.032		1.91	1.64		3.55	4.99
0325	4" x 3", 14 go., 1.8 lb./L.F.		480	.033		2.15	1.70		3.85	5.35
0600	Instollotion of secondary members, erection only									
0610	Girts, purlins, eove struts, 16 go., 6" deep	E-18	100	.400	Eo.		20.50	9.60	30.10	45.50
0615	8" deep		80	.500			25.50	12	37.50	57
0620	14 go., 6" deep		80	.500			25.50	12	37.50	57
0625	8" deep		65	.615			31.50	14.80	46.30	70.50
0630	10" deep		55	.727			37	17.45	54.45	83
0635	12" deep		50	.800			41	19.20	60.20	91
0640	12 go., 8" deep		50	.800			41	19.20	60.20	91
0645	10" deep		45	.889			45.50	21.50	67	102
0650	12" deep	▼	40	1	▼		51	24	75	114
0900	For less than 20-ton job lots									
0905	For 15 to 19 tons, odd					10%				
0910	For 10 to 14 tons, odd					25%				
0915	For 5 to 9 tons, odd					50%	50%	50%		
0920	For 1 to 4 tons, odd					75%	75%	75%		
0925	For less than 1 ton, odd					100%	100%	100%		

05 12 23.80 Subpurlins

0010	SUBPURLINS	R051223-50								
0015	Mode from recycled materials									
0020	Bulb tees, shop fabricated, pointed, 32-5/8" O.C., 40 psf L.L.									
0200	Type 218, max 10'-2" span, 3.19 plf, 2-1/8" high x 2-1/8" wide	G	E-1	3100	.008	S.F.	1.66	.39	.05	2.10 2.53
1420	For 24-5/8" spacing, odd						33%	33%		
1430	For 48-5/8" spacing, deduct						33%	33%		

05 14 Structural Aluminum Framing

05 14 23 – Non-Exposed Structural Aluminum Framing

05 14 23.05 Aluminum Shapes

0010	ALUMINUM SHAPES									
0015	Mode from recycled materials									
0020	Structural shapes, 1" to 10" members, under 1 ton	G	E-2	4000	.014	Lb.	4.18	.70	.38	5.26 6.20
0050	1 to 5 tons	G		4300	.013		3.83	.65	.36	4.84 5.70
0100	Over 5 tons	G		4600	.012		3.65	.61	.33	4.59 5.45
0300	Extrusions, over 5 tons, stock shapes	G		1330	.042		3.48	2.11	1.15	6.74 8.70
0400	Custom shapes	G	▼	1330	.042	▼	3.61	2.11	1.15	6.87 8.80

05 15 Wire Rope Assemblies

05 15 16 – Steel Wire Rope Assemblies

05 15 16.05 Accessories for Steel Wire Rope

0010 ACCESSORIES FOR STEEL WIRE ROPE

0015 Made from recycled materials

1500 Thimbles, heavy duty, 1/4"

1510 1/2"

1520 3/4"

1530 1"

1540 1-1/4"

1550 1-1/2"

1560 1-3/4"

1570 2"

1580 2-1/4"

1600 Clips, 1/4" diameter

1610 3/8" diameter

1620 1/2" diameter

1630 3/4" diameter

1640 1" diameter

1650 1-1/4" diameter

1670 1-1/2" diameter

1680 1-3/4" diameter

1690 2" diameter

1700 2-1/4" diameter

1800 Sockets, open swage, 1/4" diameter

1810 1/2" diameter

1820 3/4" diameter

1830 1" diameter

1840 1-1/4" diameter

1850 1-1/2" diameter

1860 1-3/4" diameter

1870 2" diameter

1900 Closed swage, 1/4" diameter

1910 1/2" diameter

1920 3/4" diameter

1930 1" diameter

1940 1-1/4" diameter

1950 1-1/2" diameter

1960 1-3/4" diameter

1970 2" diameter

2000 Open spelter, galv., 1/4" diameter

2010 1/2" diameter

2020 3/4" diameter

2030 1" diameter

2040 1-1/4" diameter

2050 1-1/2" diameter

2060 1-3/4" diameter

2070 2" diameter

2080 2-1/2" diameter

2100 Closed spelter, galv., 1/4" diameter

2110 1/2" diameter

2120 3/4" diameter

2130 1" diameter

2140 1-1/4" diameter

2150 1-1/2" diameter

2160 1-3/4" diameter

		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs Labor Equipment	Total	Total Incl O&P
		E-17	160	.100	Ea.	.51	5.20	5.71	9.75
			160	.100		2.23	5.20	7.43	11.65
			105	.152		5.05	7.95	13	19.50
			52	.308		10.15	16.05	26.20	39.50
			38	.421		15.60	22	37.60	55.50
			13	1.231		44	64	108	161
			8	2		90.50	104	194.50	284
			6	2.667		132	139	271	390
			4	4		178	208	386	565
			160	.100		2.64	5.20	7.84	12.10
			160	.100		2.90	5.20	8.10	12.40
			160	.100		4.66	5.20	9.86	14.30
			102	.157		7.55	8.15	15.70	22.50
			64	.250		12.60	13.05	25.65	37
			35	.457		20.50	24	44.50	64.50
			26	.615		28	32	60	87
			16	1		65	52	117	164
			12	1.333		72	69.50	141.50	203
			10	1.600		106	83.50	189.50	264
			160	.100		45.50	5.20	50.70	59
			77	.208		65.50	10.85	76.35	91.50
			19	.842		102	44	146	190
			9	1.778		183	92.50	275.50	365
			5	3.200		254	167	421	575
			3	5.333		555	278	833	1,100
			3	5.333		985	278	1,263	1,575
			1.50	10.667		1,500	555	2,055	2,625
			160	.100		27	5.20	32.20	38.50
			104	.154		46.50	8	54.50	65
			32	.500		69.50	26	95.50	123
			15	1.067		122	55.50	177.50	232
			7	2.286		183	119	302	410
			4	4		330	208	538	735
			3	5.333		490	278	768	1,025
			2	8		955	415	1,370	1,775
			160	.100		58	5.20	63.20	73
			70	.229		60.50	11.90	72.40	87.50
			26	.615		90.50	32	122.50	157
			10	1.600		252	83.50	335.50	425
			5	3.200		360	167	527	690
			4	4		765	208	973	1,200
			2	8		1,325	415	1,740	2,200
			1.20	13.333		1,525	695	2,220	2,925
			1	16		2,825	835	3,660	4,575
			160	.100		48.50	5.20	53.70	62
			88	.182		51.50	9.45	60.95	73.50
			30	.533		78.50	28	106.50	135
			13	1.231		167	64	231	296
			7	2.286		267	119	386	505
			6	2.667		575	139	714	875
			2.80	5.714		765	298	1,063	1,375

05 15 Wire Rope Assemblies

05 15 16 – Steel Wire Rope Assemblies

05 15 16.05 Accessories for Steel Wire Rope				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
2170	2" diameter	G		E-17	2	8	Ea.	945	415		1,360	1,775
2200	Jaw & jaw turnbuckles, 1/4" x 4"	G			160	.100		16.35	5.20		21.55	27
2250	1/2" x 6"	G			96	.167		20.50	8.70		29.20	38
2260	1/2" x 9"	G			77	.208		27.50	10.85		38.35	49.50
2270	1/2" x 12"	G			66	.242		31	12.65		43.65	56.50
2300	3/4" x 6"	G			38	.421		40.50	22		62.50	83
2310	3/4" x 9"	G			30	.533		45	28		73	98.50
2320	3/4" x 12"	G			28	.571		57.50	30		87.50	116
2330	3/4" x 18"	G			23	.696		69	36		105	140
2350	1" x 6"	G			17	.941		78.50	49		127.50	173
2360	1" x 12"	G			13	1.231		86	64		150	208
2370	1" x 18"	G			10	1.600		129	83.50		212.50	289
2380	1" x 24"	G			9	1.778		142	92.50		234.50	320
2400	1-1/4" x 12"	G			7	2.286		145	119		264	370
2410	1-1/4" x 18"	G			6.50	2.462		179	128		307	425
2420	1-1/4" x 24"	G			5.60	2.857		241	149		390	530
2450	1-1/2" x 12"	G			5.20	3.077		425	160		585	750
2460	1-1/2" x 18"	G			4	4		450	208		658	870
2470	1-1/2" x 24"	G			3.20	5		610	261		871	1,125
2500	1-3/4" x 18"	G			3.20	5		920	261		1,181	1,450
2510	1-3/4" x 24"	G			2.80	5.714		1,050	298		1,348	1,675
2550	2" x 24"	G			1.60	10		1,425	520		1,945	2,475

05 15 16.50 Steel Wire Rope

0010	STEEL WIRE ROPE											
0015	Made from recycled materials											
0020	6 x 19, bright, fiber core, 5000' rolls, 1/2" diameter	G					L.F.	.88			.88	.96
0050	Steel core	G						1.15			1.15	1.27
0100	Fiber core, 1" diameter	G						2.95			2.95	3.25
0150	Steel core	G						3.37			3.37	3.70
0300	6 x 19, galvanized, fiber core, 1/2" diameter	G						1.29			1.29	1.42
0350	Steel core	G						1.48			1.48	1.62
0400	Fiber core, 1" diameter	G						3.78			3.78	4.16
0450	Steel core	G						3.96			3.96	4.36
0500	6 x 7, bright, IPS, fiber core, <500 L.F. w/acc., 1/4" diameter	G		E-17	6400	.003		1.47	.13		1.60	1.85
0510	1/2" diameter	G			2100	.008		3.59	.40		3.99	4.65
0520	3/4" diameter	G			960	.017		6.50	.87		7.37	8.70
0550	6 x 19, bright, IPS, IWRC, <500 L.F. w/acc., 1/4" diameter	G			5760	.003		.97	.14		1.11	1.32
0560	1/2" diameter	G			1730	.009		1.57	.48		2.05	2.57
0570	3/4" diameter	G			770	.021		2.72	1.08		3.80	4.90
0580	1" diameter	G			420	.038		4.61	1.99		6.60	8.55
0590	1-1/4" diameter	G			290	.055		7.65	2.87		10.52	13.45
0600	1-1/2" diameter	G			192	.083		9.40	4.34		13.74	18
0610	1-3/4" diameter	G		E-18	240	.167		15	8.50	4	27.50	35.50
0620	2" diameter	G			160	.250		19.20	12.75	6	37.95	49.50
0630	2-1/4" diameter	G			160	.250		25.50	12.75	6	44.25	57
0650	6 x 37, bright, IPS, IWRC, <500 L.F. w/acc., 1/4" diameter	G		E-17	6400	.003		1.15	.13		1.28	1.50
0660	1/2" diameter	G			1730	.009		1.96	.48		2.44	3
0670	3/4" diameter	G			770	.021		3.16	1.08		4.24	5.40
0680	1" diameter	G			430	.037		5	1.94		6.94	8.90
0690	1-1/4" diameter	G			290	.055		7.60	2.87		10.47	13.40
0700	1-1/2" diameter	G			190	.084		10.85	4.39		15.24	19.70
0710	1-3/4" diameter	G		E-18	260	.154		17.20	7.85	3.69	28.74	36.50

05 15 Wire Rope Assemblies

05 15 16 – Steel Wire Rope Assemblies

05 15 16.50 Steel Wire Rope						2014 Bare Costs				Total Incl O&P
			Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total
0720	2" diameter	G	E-18	200	.200	L.F.	22.50	10.20	4.80	37.50
0730	2-1/4" diameter	G	▼	160	.250		29.50	12.75	6	48.25
0800	6 x 19 & 6 x 37, swaged, 1/2" diameter	G	E-17	1220	.013		2.43	.68		3.11
0810	9/16" diameter	G		1120	.014		2.83	.74		3.57
0820	5/8" diameter	G		930	.017		3.35	.90		4.25
0830	3/4" diameter	G		640	.025		4.27	1.30		5.57
0840	7/8" diameter	G		480	.033		5.40	1.74		7.14
0850	1" diameter	G		350	.046		6.55	2.38		8.93
0860	1-1/8" diameter	G		288	.056		8.10	2.89		10.99
0870	1-1/4" diameter	G		230	.070		9.80	3.62		13.42
0880	1-3/8" diameter	G	▼	192	.083		11.30	4.34		15.64
0890	1-1/2" diameter	G	E-18	300	.133		13.75	6.80	3.20	23.75

05 15 16.60 Galvanized Steel Wire Rope and Accessories

0010 GALVANIZED STEEL WIRE ROPE & ACCESSORIES										
0015	Mode from recycled materials									
3000	Aircraft cable, galvanized, 7 x 7 x 1/8"	G	E-17	5000	.003	L.F.	.17	.17		.34
3100	Clomps, 1/8"	G	"	125	.128	Eq.	1.89	6.65		8.54

05 15 16.70 Temporary Cable Safety Railing

0010	TEMPORARY CABLE SAFETY RAILING, Each 100' strand incl.									
0020	2 eyebolts, 1 turnbuckle, 100' cable, 2 thimbles, 6 clips									
0025	Mode from recycled materials									
0100	One strand using 1/4" cable & accessories	G	2 Sswk	4	4	C.L.F.	205	204		409
0200	1/2" cable & accessories	G	"	2	8	"	430	410		840

05 21 Steel Joist Framing

05 21 13 – Deep Longspan Steel Joist Framing

05 21 13.50 Deep Longspan Joists

0010 DEEP LONGSPAN JOISTS										
3010	DLH series, 40-ton job lots, bolted cross bridging, shop primer									
3015	Mode from recycled materials									
3040	Spans to 144' (shipped in 2 pieces)	G	E-7	13	6.154	Ton	1,925	310	139	2,374
3200	52DLH11, 26 lb./L.F.	G		2000	.040	L.F.	24	2.03	.91	26.94
3220	52DLH16, 45 lb./L.F.	G		2000	.040		43.50	2.03	.91	46.44
3240	56DLH11, 26 lb./L.F.	G		2000	.040		25	2.03	.91	27.94
3260	56DLH16, 46 lb./L.F.	G		2000	.040		44.50	2.03	.91	47.44
3280	60DLH12, 29 lb./L.F.	G		2000	.040		28	2.03	.91	30.94
3300	60DLH17, 52 lb./L.F.	G		2000	.040		50	2.03	.91	52.94
3320	64DLH12, 31 lb./L.F.	G		2200	.036		30	1.84	.82	32.66
3340	64DLH17, 52 lb./L.F.	G		2200	.036		50	1.84	.82	52.66
3360	68DLH13, 37 lb./L.F.	G		2200	.036		35.50	1.84	.82	38.16
3380	68DLH18, 61 lb./L.F.	G		2200	.036		59	1.84	.82	61.66
3400	72DLH14, 41 lb./L.F.	G		2200	.036		39.50	1.84	.82	42.16
3420	72DLH19, 70 lb./L.F.	G	▼	2200	.036	▼	67.50	1.84	.82	70.16
3500	For less than 40-ton job lots									
3502	For 30 to 39 tons, odd						10%			
3504	20 to 29 tons, odd						20%			
3506	10 to 19 tons, odd						30%			
3507	5 to 9 tons, odd						50%	25%		
3508	1 to 4 tons, odd						75%	50%		
3509	Less than 1 ton, odd						100%	100%		

05 21 Steel Joist Framing

05 21 13 – Deep Longspan Steel Joist Framing

05 21 13.50 Deep Longspan Joists				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
4010	SLH series, 40-ton job lots, bolted cross bridging, shop primer											
4040	Spons to 200' (shipped in 3 pieces)	G	E-7	13	6.154	Ton		1,975	310	139	2,424	2,875
4200	80SLH15, 40 lb./L.F.	G		1500	.053	L.F.		39.50	2.70	1.21	43.41	49.50
4220	80SLH20, 75 lb./L.F.	G		1500	.053			74.50	2.70	1.21	78.41	88
4240	88SLH16, 46 lb./L.F.	G		1500	.053			45.50	2.70	1.21	49.41	56
4260	88SLH21, 89 lb./L.F.	G		1500	.053			88.50	2.70	1.21	92.41	103
4280	96SLH17, 52 lb./L.F.	G		1500	.053			51.50	2.70	1.21	55.41	62.50
4300	96SLH22, 102 lb./L.F.	G		1500	.053			101	2.70	1.21	104.91	117
4320	104SLH18, 59 lb./L.F.	G		1800	.044			58.50	2.25	1.01	61.76	69.50
4340	104SLH23, 109 lb./L.F.	G		1800	.044			108	2.25	1.01	111.26	124
4360	112SLH19, 67 lb./L.F.	G		1800	.044			66.50	2.25	1.01	69.76	78
4380	112SLH24, 131 lb./L.F.	G		1800	.044			130	2.25	1.01	133.26	148
4400	120SLH20, 77 lb./L.F.	G		1800	.044			76.50	2.25	1.01	79.76	89
4420	120SLH25, 152 lb./L.F.	G	▼	1800	.044	▼		151	2.25	1.01	154.26	171
6100	For less than 40-ton job lots											
6102	For 30 to 39 tons, add							10%				
6104	20 to 29 tons, add							20%				
6106	10 to 19 tons, add							30%				
6107	5 to 9 tons, add							50%	25%			
6108	1 to 4 tons, add							75%	50%			
6109	Less than 1 ton, add							100%	100%			

05 21 16 – Longspan Steel Joist Framing

05 21 16.50 Longspan Joists

0010	LONGSPAN JOISTS											
2000	LH series, 40-ton job lots, bolted cross bridging, shop primer											
2015	Made from recycled materials											
2040	Longspan joists, LH series, up to 96'	G	E-7	13	6.154	Ton		1,825	310	139	2,274	2,725
2200	18LH04, 12 lb./L.F.	G		1400	.057	L.F.		11	2.89	1.29	15.18	18.50
2220	18LH08, 19 lb./L.F.	G		1400	.057			17.40	2.89	1.29	21.58	25.50
2240	20LH04, 12 lb./L.F.	G		1400	.057			11	2.89	1.29	15.18	18.50
2260	20LH08, 19 lb./L.F.	G		1400	.057			17.40	2.89	1.29	21.58	25.50
2280	24LH05, 13 lb./L.F.	G		1400	.057			11.90	2.89	1.29	16.08	19.50
2300	24LH10, 23 lb./L.F.	G		1400	.057			21	2.89	1.29	25.18	29.50
2320	28LH06, 16 lb./L.F.	G		1800	.044			14.65	2.25	1.01	17.91	21
2340	28LH11, 25 lb./L.F.	G		1800	.044			23	2.25	1.01	26.26	30
2360	32LH08, 17 lb./L.F.	G		1800	.044			15.60	2.25	1.01	18.86	22
2380	32LH13, 30 lb./L.F.	G		1800	.044			27.50	2.25	1.01	30.76	35.50
2400	36LH09, 21 lb./L.F.	G		1800	.044			19.25	2.25	1.01	22.51	26
2420	36LH14, 36 lb./L.F.	G		1800	.044			33	2.25	1.01	36.26	41.50
2440	40LH10, 21 lb./L.F.	G		2200	.036			19.25	1.84	.82	21.91	25
2460	40LH15, 36 lb./L.F.	G		2200	.036			33	1.84	.82	35.66	40.50
2480	44LH11, 22 lb./L.F.	G		2200	.036			20	1.84	.82	22.66	26
2500	44LH16, 42 lb./L.F.	G		2200	.036			38.50	1.84	.82	41.16	46.50
2520	48LH11, 22 lb./L.F.	G		2200	.036			20	1.84	.82	22.66	26
2540	48LH16, 42 lb./L.F.	G	▼	2200	.036	▼		38.50	1.84	.82	41.16	46.50
2600	For less than 40-ton job lots											
2602	For 30 to 39 tons, add							10%				
2604	20 to 29 tons, add							20%				
2606	10 to 19 tons, add							30%				
2607	5 to 9 tons, add							50%	25%			
2608	1 to 4 tons, add							75%	50%			
2609	Less than 1 ton, add							100%	100%			

05 21 Steel Joist Framing

05 21 16 – Longspan Steel Joist Framing

05 21 16.50 Longspan Joists

6000	Far welded cross bridging, add	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
							30%			

05 21 19 – Open Web Steel Joist Framing

05 21 19.10 Open Web Joists

0010	OPEN WEB JOISTS										
0015	Made from recycled materials										
0050	K series, 40-ton lots, horiz. bridging, spans to 30', shop primer	G	E-7	12	6.667	Ton	1,650	340	151	2,141	2,575
0130	8K1, 5.1 lb./L.F.	G		1200	.067	L.F.	4.22	3.38	1.51	9.11	12.10
0140	10K1, 5.0 lb./L.F.	G		1200	.067		4.14	3.38	1.51	9.03	12
0160	12K3, 5.7 lb./L.F.	G		1500	.053		4.72	2.70	1.21	8.63	11.15
0180	14K3, 6.0 lb./L.F.	G		1500	.053		4.97	2.70	1.21	8.88	11.40
0200	16K3, 6.3 lb./L.F.	G		1800	.044		5.20	2.25	1.01	8.46	10.75
0220	16K6, 8.1 lb./L.F.	G		1800	.044		6.70	2.25	1.01	9.96	12.40
0240	18K5, 7.7 lb./L.F.	G		2000	.040		6.40	2.03	.91	9.34	11.50
0260	18K9, 10.2 lb./L.F.	G		2000	.040		8.45	2.03	.91	11.39	13.80
0440	K series, 30' to 50' spans	G		17	4.706	Ton	1,625	238	107	1,970	2,325
0500	20K5, 8.2 lb./L.F.	G		2000	.040	L.F.	6.65	2.03	.91	9.59	11.85
0520	20K9, 10.8 lb./L.F.	G		2000	.040		8.80	2.03	.91	11.74	14.15
0540	22K5, 8.8 lb./L.F.	G		2000	.040		7.15	2.03	.91	10.09	12.35
0560	22K9, 11.3 lb./L.F.	G		2000	.040		9.20	2.03	.91	12.14	14.60
0580	24K6, 9.7 lb./L.F.	G		2200	.036		7.90	1.84	.82	10.56	12.75
0600	24K10, 13.1 lb./L.F.	G		2200	.036		10.65	1.84	.82	13.31	15.80
0620	26K6, 10.6 lb./L.F.	G		2200	.036		8.60	1.84	.82	11.26	13.55
0640	26K10, 13.8 lb./L.F.	G		2200	.036		11.20	1.84	.82	13.86	16.45
0660	28K8, 12.7 lb./L.F.	G		2400	.033		10.30	1.69	.76	12.75	15.10
0680	28K12, 17.1 lb./L.F.	G		2400	.033		13.90	1.69	.76	16.35	19.05
0700	30K8, 13.2 lb./L.F.	G		2400	.033		10.75	1.69	.76	13.20	15.55
0720	30K12, 17.6 lb./L.F.	G	▼	2400	.033	▼	14.30	1.69	.76	16.75	19.50
0800	For less than 40-ton job lots										
0802	For 30 to 39 tons, add						10%				
0804	20 to 29 tons, add						20%				
0806	10 to 19 tons, add						30%				
0807	5 to 9 tons, add						50%	25%			
0808	1 to 4 tons, add						75%	50%			
0809	Less than 1 ton, add						100%	100%			
1010	CS series, 40-ton job lots, horizontal bridging, shop primer										
1040	Spans to 30'	G	E-7	12	6.667	Ton	1,700	340	151	2,191	2,625
1100	10CS2, 7.5 lb./L.F.	G		1200	.067	L.F.	6.40	3.38	1.51	11.29	14.45
1120	12CS2, 8.0 lb./L.F.	G		1500	.053		6.80	2.70	1.21	10.71	13.45
1140	14CS2, 8.0 lb./L.F.	G		1500	.053		6.80	2.70	1.21	10.71	13.45
1160	16CS2, 8.5 lb./L.F.	G		1800	.044		7.25	2.25	1.01	10.51	12.95
1180	16CS4, 14.5 lb./L.F.	G		1800	.044		12.35	2.25	1.01	15.61	18.55
1200	18CS2, 9.0 lb./L.F.	G		2000	.040		7.65	2.03	.91	10.59	12.90
1220	18CS4, 15.0 lb./L.F.	G		2000	.040		12.75	2.03	.91	15.69	18.55
1240	20CS2, 9.5 lb./L.F.	G		2000	.040		8.10	2.03	.91	11.04	13.40
1260	20CS4, 16.5 lb./L.F.	G		2000	.040		14.05	2.03	.91	16.99	19.95
1280	22CS2, 10.0 lb./L.F.	G		2000	.040		8.50	2.03	.91	11.44	13.85
1300	22CS4, 16.5 lb./L.F.	G		2000	.040		14.05	2.03	.91	16.99	19.95
1320	24CS2, 10.0 lb./L.F.	G		2200	.036		8.50	1.84	.82	11.16	13.45
1340	24CS4, 16.5 lb./L.F.	G		2200	.036		14.05	1.84	.82	16.71	19.55
1360	26CS2, 10.0 lb./L.F.	G		2200	.036		8.50	1.84	.82	11.16	13.45
1380	26CS4, 16.5 lb./L.F.	G		2200	.036		14.05	1.84	.82	16.71	19.55
1400	28CS2, 10.5 lb./L.F.	G		2400	.033		8.95	1.69	.76	11.40	13.55

05 21 Steel Joist Framing

05 21 19 – Open Web Steel Joist Framing

05 21 19.10 Open Web Joists			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
1420	28CS4, 16.5 lb./L.F.		E-7	2400	.033	L.F.	14.05	1.69	.76	16.50	19.20
1440	30CS2, 11.0 lb./L.F.			2400	.033		9.35	1.69	.76	11.80	14.05
1460	30CS4, 16.5 lb./L.F.			2400	.033		14.05	1.69	.76	16.50	19.20
1500	For less than 40-ton job lots										
1502	For 30 to 39 tons, add						10%				
1504	20 to 29 tons, add						20%				
1506	10 to 19 tons, add						30%				
1507	5 to 9 tons, add						50%	25%			
1508	1 to 4 tons, add						75%	50%			
1509	Less than 1 ton, add						100%	100%			
6200	For shop prime paint other than mfrs. standard, add						20%				
6300	For battom chord extensions, add per chord					Ea.	36			36	39.50
6400	Individual steel bearing plate, 6" x 6" x 1/4" with J-hook		1 Bric	160	.050	"	7.95	2.28		10.23	12.25

05 21 23 – Steel Joist Girder Framing

05 21 23.50 Joist Girders

0010	JOIST GIRDERS										
0015	Made from recycled materials										
7020	Joist girders, 40-ton job lots, shop primer		E-5	13	6.154	Ton	1,650	310	129	2,089	2,500
7100	For less than 40-ton job lots										
7102	For 30 to 39 tons, add						10%				
7104	20 to 29 tons, add						20%				
7106	10 to 19 tons, add						30%				
7107	5 to 9 tons, add						50%	25%			
7108	1 to 4 tons, add						75%	50%			
7109	Less than 1 ton, add						100%	100%			
8000	Trusses, 40-ton job lots, shop fabricated WT chords, shop primer		E-5	11	7.273	Ton	5,425	370	152	5,947	6,750
8100	For less than 40-ton job lots										
8102	For 30 to 39 tons, add						10%				
8104	20 to 29 tons, add						20%				
8106	10 to 19 tons, add						30%				
8107	5 to 9 tons, add						50%	25%			
8108	1 to 4 tons, add						75%	50%			
8109	Less than 1 ton, add						100%	100%			

05 31 Steel Decking

05 31 13 – Steel Floor Decking

05 31 13.50 Floor Decking

0010	FLOOR DECKING										
0015	Made from recycled materials										
5100	Non-cellular composite decking, galvanized, 1-1/2" deep, 16 ga.		E-4	3500	.009	S.F.	3.31	.47	.04	3.82	4.51
5120	18 ga.			3650	.009		2.68	.45	.04	3.17	3.79
5140	20 ga.			3800	.008		2.13	.43	.04	2.60	3.16
5200	2" deep, 22 ga.			3860	.008		1.86	.43	.04	2.33	2.85
5300	20 ga.			3600	.009		2.05	.46	.04	2.55	3.11
5400	18 ga.			3380	.009		2.62	.49	.04	3.15	3.79
5500	16 ga.			3200	.010		3.27	.52	.04	3.83	4.56
5700	3" deep, 22 ga.			3200	.010		2.03	.52	.04	2.59	3.19
5800	20 ga.			3000	.011		2.26	.55	.05	2.86	3.50
5900	18 ga.			2850	.011		2.79	.58	.05	3.42	4.14
6000	16 ga.		▼	2700	.012	▼	3.72	.61	.05	4.38	5.25

05 31 Steel Decking

05 31 23 – Steel Roof Decking

05 31 23.50 Roof Decking

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	ROOF DECKING										
0015	Made from recycled materials										
2100	Open type, 1-1/2" deep, Type B, wide rib, galv., 22 ga., under 50 sq.		E-4	4500	.007	S.F.	1.97	.37	.03	2.37	2.85
2200	50-500 squares			4900	.007		1.53	.34	.03	1.90	2.30
2400	Over 500 squares			5100	.006		1.42	.32	.03	1.77	2.16
2600	20 ga., under 50 squares			3865	.008		2.30	.43	.04	2.77	3.33
2650	50-500 squares			4170	.008		1.84	.40	.03	2.27	2.77
2700	Over 500 squares			4300	.007		1.66	.38	.03	2.07	2.55
2900	18 ga., under 50 squares			3800	.008		2.97	.43	.04	3.44	4.08
2950	50-500 squares			4100	.008		2.38	.40	.03	2.81	3.37
3000	Over 500 squares			4300	.007		2.14	.38	.03	2.55	3.08
3050	16 ga., under 50 squares			3700	.009		4	.45	.04	4.49	5.25
3060	50-500 squares			4000	.008		3.20	.41	.04	3.65	4.29
3100	Over 500 squares			4200	.008		2.88	.39	.03	3.30	3.90
3200	3" deep, Type N, 22 ga., under 50 squares			3600	.009		2.90	.46	.04	3.40	4.04
3250	50-500 squares			3800	.008		2.32	.43	.04	2.79	3.36
3260	over 500 squares			4000	.008		2.09	.41	.04	2.54	3.06
3300	20 ga., under 50 squares			3400	.009		3.13	.49	.04	3.66	4.35
3350	50-500 squares			3600	.009		2.50	.46	.04	3	3.60
3360	over 500 squares			3800	.008		2.25	.43	.04	2.72	3.29
3400	18 ga., under 50 squares			3200	.010		4.04	.52	.04	4.60	5.40
3450	50-500 squares			3400	.009		3.23	.49	.04	3.76	4.47
3460	over 500 squares			3600	.009		2.91	.46	.04	3.41	4.05
3500	16 ga., under 50 squares			3000	.011		5.35	.55	.05	5.95	6.90
3550	50-500 squares			3200	.010		4.27	.52	.04	4.83	5.65
3560	over 500 squares			3400	.009		3.85	.49	.04	4.38	5.15
3700	4-1/2" deep, Type J, 20 ga., over 50 squares			2700	.012		3.50	.61	.05	4.16	4.99
3800	18 ga.			2460	.013		4.62	.67	.06	5.35	6.35
3900	16 ga.			2350	.014		6	.70	.06	6.76	7.90
4100	6" deep, Type H, 18 ga., over 50 squares			2000	.016		5.55	.83	.07	6.45	7.65
4200	16 ga.			1930	.017		6.90	.86	.07	7.83	9.20
4300	14 ga.			1860	.017		8.90	.89	.08	9.87	11.45
4500	7-1/2" deep, Type H, 18 ga., over 50 squares			1690	.019		6.55	.98	.08	7.61	9.05
4600	16 ga.			1590	.020		8.20	1.04	.09	9.33	10.95
4700	14 ga.			1490	.021		10.20	1.11	.10	11.41	13.30
4800	For painted instead of galvanized, deduct						5%				
5000	For acoustical perforated with fiberglass insulation, add					S.F.	25%				
5100	For type F intermediate rib instead of type B wide rib, add						25%				
5150	For type A narrow rib instead of type B wide rib, add						25%				

05 31 33 – Steel Form Decking

05 31 33.50 Form Decking

0010	FORM DECKING										
0015	Made from recycled materials										
6100	Slab form, steel, 28 ga., 9/16" deep, Type UFS, uncoated		E-4	4000	.008	S.F.	1.49	.41	.04	1.94	2.41
6200	Galvanized			4000	.008		1.32	.41	.04	1.77	2.22
6220	24 ga., 1" deep, Type UF1X, uncoated			3900	.008		1.43	.42	.04	1.89	2.36
6240	Galvanized			3900	.008		1.68	.42	.04	2.14	2.64
6300	24 ga., 1-5/16" deep, Type UFX, uncoated			3800	.008		1.52	.43	.04	1.99	2.48
6400	Galvanized			3800	.008		1.79	.43	.04	2.26	2.78
6500	22 ga., 1-5/16" deep, uncoated			3700	.009		1.92	.45	.04	2.41	2.94
6600	Galvanized			3700	.009		1.96	.45	.04	2.45	2.99
6700	22 ga., 2" deep, uncoated			3600	.009		2.50	.46	.04	3	3.60

05 31 Steel Decking

05 31 33 – Steel Form Decking

05 31 33.50 Form Decking			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
6800	Galvanized		E-4	3600	.009	S.F.	2.45	.46	.04	2.95	3.55
7000	Sheet metal edge closure form, 12" wide with 2 bends, galvanized										
7100	18 ga.		E-14	360	.022	L.F.	4.04	1.18	.39	5.61	6.95
7200	16 ga.		"	360	.022	"	5.45	1.18	.39	7.02	8.50

05 35 Raceway Decking Assemblies

05 35 13 – Steel Cellular Decking

05 35 13.50 Cellular Decking

0010	CELLULAR DECKING										
0015	Made from recycled materials										
0200	Cellular units, galv, 1-1/2" deep, Type BC, 20-20 ga., over 15 squares		E-4	1460	.022	S.F.	7.75	1.13	.10	8.98	10.65
0250	18-20 ga.			1420	.023		8.85	1.16	.10	10.11	11.85
0300	18-18 ga.			1390	.023		9.05	1.19	.10	10.34	12.15
0320	16-18 ga.			1360	.024		10.80	1.21	.10	12.11	14.10
0340	16-16 ga.			1330	.024		12	1.24	.11	13.35	15.50
0400	3" deep, Type NC, galvanized, 20-20 ga.			1375	.023		8.55	1.20	.10	9.85	11.65
0500	18-20 ga.			1350	.024		10.35	1.22	.11	11.68	13.65
0600	18-18 ga.			1290	.025		10.30	1.28	.11	11.69	13.70
0700	16-18 ga.			1230	.026		11.60	1.34	.12	13.06	15.25
0800	16-16 ga.			1150	.028		12.65	1.44	.12	14.21	16.55
1000	4-1/2" deep, Type JC, galvanized, 18-20 ga.			1100	.029		11.90	1.50	.13	13.53	15.90
1100	18-18 ga.			1040	.031		11.85	1.59	.14	13.58	15.95
1200	16-18 ga.			980	.033		13.35	1.68	.15	15.18	17.80
1300	16-16 ga.		▼	935	.034	▼	14.55	1.77	.15	16.47	19.30
1500	For acoustical deck, add						15%				
1700	For cells used for ventilation, add						15%				
1900	For multi-story or congested site, add							50%			
8000	Metal deck and trench, 2" thick, 20 ga., combination										
8010	60% cellular, 40% non-cellular, inserts and trench		R-4	1100	.036	S.F.	15.55	1.89	.13	17.57	20.50

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.05 Bracing

0010	BRACING , shear wall X-bracing, per 10' x 10' bay, one face										
0015	Made of recycled materials										
0120	Metal strap, 20 ga. x 4" wide		2 Corp	18	.889	Ea.	17.55	41		58.55	82.50
0130	6" wide			18	.889		29.50	41		70.50	95
0160	18 ga. x 4" wide			16	1		30.50	46		76.50	105
0170	6" wide		▼	16	1	▼	45	46		91	121
0410	Continuous strap bracing, per horizontal row on both faces										
0420	Metal strap, 20 ga. x 2" wide, studs 12" O.C.		1 Corp	7	1.143	C.L.F.	53	52.50		105.50	139
0430	16" O.C.			8	1		53	46		99	129
0440	24" O.C.			10	.800		53	36.50		89.50	115
0450	18 ga. x 2" wide, studs 12" O.C.			6	1.333		75	61		136	177
0460	16" O.C.			7	1.143		75	52.50		127.50	164
0470	24" O.C.		▼	8	1	▼	75	46		121	154

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.10 Bridging

			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	BRIDGING , solid between studs w/1-1/4" leg track, per stud bay										
0015	Made from recycled materials										
0200	Studs 12" O.C., 18 ga. x 2-1/2" wide		1 Carp	125	.064	Ea.	.89	2.93		3.82	5.50
0210	3-5/8" wide			120	.067		1.07	3.06		4.13	5.90
0220	4" wide			120	.067		1.13	3.06		4.19	5.95
0230	6" wide			115	.070		1.48	3.19		4.67	6.55
0240	8" wide			110	.073		1.84	3.33		5.17	7.15
0300	16 ga. x 2-1/2" wide			115	.070		1.13	3.19		4.32	6.15
0310	3-5/8" wide			110	.073		1.38	3.33		4.71	6.65
0320	4" wide			110	.073		1.47	3.33		4.80	6.75
0330	6" wide			105	.076		1.87	3.49		5.36	7.45
0340	8" wide			100	.080		2.34	3.67		6.01	8.25
1200	Studs 16" O.C., 18 ga. x 2-1/2" wide			125	.064		1.14	2.93		4.07	5.80
1210	3-5/8" wide			120	.067		1.37	3.06		4.43	6.25
1220	4" wide			120	.067		1.45	3.06		4.51	6.30
1230	6" wide			115	.070		1.90	3.19		5.09	7
1240	8" wide			110	.073		2.36	3.33		5.69	7.75
1300	16 ga. x 2-1/2" wide			115	.070		1.45	3.19		4.64	6.50
1310	3-5/8" wide			110	.073		1.77	3.33		5.10	7.10
1320	4" wide			110	.073		1.88	3.33		5.21	7.20
1330	6" wide			105	.076		2.39	3.49		5.88	8.05
1340	8" wide			100	.080		3	3.67		6.67	8.95
2200	Studs 24" O.C., 18 ga. x 2-1/2" wide			125	.064		1.65	2.93		4.58	6.35
2210	3-5/8" wide			120	.067		1.98	3.06		5.04	6.90
2220	4" wide			120	.067		2.10	3.06		5.16	7.05
2230	6" wide			115	.070		2.75	3.19		5.94	7.95
2240	8" wide			110	.073		3.41	3.33		6.74	8.90
2300	16 ga. x 2-1/2" wide			115	.070		2.10	3.19		5.29	7.25
2310	3-5/8" wide			110	.073		2.55	3.33		5.88	7.95
2320	4" wide			110	.073		2.72	3.33		6.05	8.15
2330	6" wide			105	.076		3.46	3.49		6.95	9.20
2340	8" wide			100	.080		4.34	3.67		8.01	10.45
3000	Continuous bridging, per row										
3100	16 ga. x 1-1/2" channel thru studs 12" O.C.		1 Carp	6	1.333	C.L.F.	48	61		109	148
3110	16" O.C.			7	1.143		48	52.50		100.50	134
3120	24" O.C.			8.80	.909		48	41.50		89.50	118
4100	2" x 2" angle x 18 ga., studs 12" O.C.			7	1.143		75	52.50		127.50	164
4110	16" O.C.			9	.889		75	41		116	146
4120	24" O.C.			12	.667		75	30.50		105.50	130
4200	16 ga., studs 12" O.C.			5	1.600		94.50	73.50		168	217
4210	16" O.C.			7	1.143		94.50	52.50		147	185
4220	24" O.C.			10	.800		94.50	36.50		131	161

05 41 13.25 Framing, Boxed Headers/Beams

0010	FRAMING, BOXED HEADERS/BEAMS										
0015	Made from recycled materials										
0200	Double, 18 ga. x 6" deep		2 Carp	220	.073	L.F.	5.10	3.33		8.43	10.75
0210	8" deep			210	.076		5.65	3.49		9.14	11.60
0220	10" deep			200	.080		6.90	3.67		10.57	13.25
0230	12" deep			190	.084		7.55	3.86		11.41	14.25
0300	16 ga. x 8" deep			180	.089		6.50	4.08		10.58	13.45
0310	10" deep			170	.094		7.90	4.32		12.22	15.30
0320	12" deep			160	.100		8.60	4.59		13.19	16.55

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.25 Framing, Boxed Headers/Beams				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0400	14 ga. x 10" deep	G	2 Carp	140	.114	L.F.		9.10	5.25		14.35	18.10
0410	12" deep	G		130	.123			10	5.65		15.65	19.65
1210	Triple, 18 ga. x 8" deep	G		170	.094			8.20	4.32		12.52	15.65
1220	10" deep	G		165	.097			9.85	4.45		14.30	17.70
1230	12" deep	G		160	.100			10.85	4.59		15.44	19
1300	16 ga. x 8" deep	G		145	.110			9.50	5.05		14.55	18.20
1310	10" deep	G		140	.114			11.35	5.25		16.60	20.50
1320	12" deep	G		135	.119			12.40	5.45		17.85	22
1400	14 ga. x 10" deep	G		115	.139			12.40	6.40		18.80	23.50
1410	12" deep	G		110	.145			13.70	6.65		20.35	25.50

05 41 13.30 Framing, Stud Walls

0010	FRAMING, STUD WALLS w/top & battam track, no openings,											
0020	Headers, beams, bridging or bracing											
0025	Made from recycled materials											
4100	8' high walls, 18 ga. x 2-1/2" wide, studs 12" O.C.	G	2 Carp	54	.296	L.F.		8.50	13.60		22.10	30.50
4110	16" O.C.	G		77	.208			6.80	9.55		16.35	22
4120	24" O.C.	G		107	.150			5.10	6.85		11.95	16.20
4130	3-5/8" wide, studs 12" O.C.	G		53	.302			10.05	13.85		23.90	32.50
4140	16" O.C.	G		76	.211			8.05	9.65		17.70	24
4150	24" O.C.	G		105	.152			6.05	7		13.05	17.45
4160	4" wide, studs 12" O.C.	G		52	.308			10.55	14.10		24.65	33.50
4170	16" O.C.	G		74	.216			8.45	9.90		18.35	24.50
4180	24" O.C.	G		103	.155			6.35	7.10		13.45	18
4190	6" wide, studs 12" O.C.	G		51	.314			13.40	14.40		27.80	36.50
4200	16" O.C.	G		73	.219			10.75	10.05		20.80	27.50
4210	24" O.C.	G		101	.158			8.10	7.25		15.35	20
4220	8" wide, studs 12" O.C.	G		50	.320			16.30	14.65		30.95	40.50
4230	16" O.C.	G		72	.222			13.10	10.20		23.30	30
4240	24" O.C.	G		100	.160			9.90	7.35		17.25	22
4300	16 ga. x 2-1/2" wide, studs 12" O.C.	G		47	.340			10.10	15.60		25.70	35
4310	16" O.C.	G		68	.235			8	10.80		18.80	25.50
4320	24" O.C.	G		94	.170			5.90	7.80		13.70	18.55
4330	3-5/8" wide, studs 12" O.C.	G		46	.348			12.05	15.95		28	38
4340	16" O.C.	G		66	.242			9.55	11.10		20.65	27.50
4350	24" O.C.	G		92	.174			7.05	7.95		15	20
4360	4" wide, studs 12" O.C.	G		45	.356			12.65	16.30		28.95	39
4370	16" O.C.	G		65	.246			10	11.30		21.30	28.50
4380	24" O.C.	G		90	.178			7.40	8.15		15.55	21
4390	6" wide, studs 12" O.C.	G		44	.364			15.80	16.65		32.45	43
4400	16" O.C.	G		64	.250			12.55	11.45		24	31.50
4410	24" O.C.	G		88	.182			9.30	8.35		17.65	23
4420	8" wide, studs 12" O.C.	G		43	.372			19.50	17.05		36.55	48
4430	16" O.C.	G		63	.254			15.50	11.65		27.15	35
4440	24" O.C.	G		86	.186			11.50	8.55		20.05	26
5100	10' high walls, 18 ga. x 2-1/2" wide, studs 12" O.C.	G		54	.296			10.20	13.60		23.80	32
5110	16" O.C.	G		77	.208			8.05	9.55		17.60	23.50
5120	24" O.C.	G		107	.150			5.95	6.85		12.80	17.15
5130	3-5/8" wide, studs 12" O.C.	G		53	.302			12.05	13.85		25.90	35
5140	16" O.C.	G		76	.211			9.55	9.65		19.20	25.50
5150	24" O.C.	G		105	.152			7.05	7		14.05	18.55
5160	4" wide, studs 12" O.C.	G		52	.308			12.65	14.10		26.75	36
5170	16" O.C.	G		74	.216			10.05	9.90		19.95	26.50

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.30 Framing, Stud Walls

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
5180	24" O.C.	G	2 Carp	103	.155	L.F.	7.40	7.10		14.50	19.15
5190	6" wide, studs 12" O.C.	G		51	.314		16	14.40		30.40	39.50
5200	16" O.C.	G		73	.219		12.70	10.05		22.75	29.50
5210	24" O.C.	G		101	.158		9.40	7.25		16.65	21.50
5220	8" wide, studs 12" O.C.	G		50	.320		19.50	14.65		34.15	44
5230	16" O.C.	G		72	.222		15.50	10.20		25.70	33
5240	24" O.C.	G		100	.160		11.50	7.35		18.85	24
5300	16 ga. x 2-1/2" wide, studs 12" O.C.	G		47	.340		12.20	15.60		27.80	37.50
5310	16" O.C.	G		68	.235		9.55	10.80		20.35	27
5320	24" O.C.	G		94	.170		6.95	7.80		14.75	19.70
5330	3-5/8" wide, studs 12" O.C.	G		46	.348		14.55	15.95		30.50	40.50
5340	16" O.C.	G		66	.242		11.40	11.10		22.50	29.50
5350	24" O.C.	G		92	.174		8.30	7.95		16.25	21.50
5360	4" wide, studs 12" O.C.	G		45	.356		15.25	16.30		31.55	42
5370	16" O.C.	G		65	.246		12	11.30		23.30	30.50
5380	24" O.C.	G		90	.178		8.70	8.15		16.85	22
5390	6" wide, studs 12" O.C.	G		44	.364		19	16.65		35.65	46.50
5400	16" O.C.	G		64	.250		14.95	11.45		26.40	34
5410	24" O.C.	G		88	.182		10.90	8.35		19.25	25
5420	8" wide, studs 12" O.C.	G		43	.372		23.50	17.05		40.55	52.50
5430	16" O.C.	G		63	.254		18.50	11.65		30.15	38.50
5440	24" O.C.	G		86	.186		13.50	8.55		22.05	28
6190	12' high walls, 18 ga. x 6" wide, studs 12" O.C.	G		41	.390		18.65	17.90		36.55	48
6200	16" O.C.	G		58	.276		14.70	12.65		27.35	35.50
6210	24" O.C.	G		81	.198		10.75	9.05		19.80	26
6220	8" wide, studs 12" O.C.	G		40	.400		22.50	18.35		40.85	53.50
6230	16" O.C.	G		57	.281		17.90	12.85		30.75	39.50
6240	24" O.C.	G		80	.200		13.10	9.15		22.25	28.50
6390	16 ga. x 6" wide, studs 12" O.C.	G		35	.457		22.50	21		43.50	57
6400	16" O.C.	G		51	.314		17.40	14.40		31.80	41
6410	24" O.C.	G		70	.229		12.55	10.50		23.05	30
6420	8" wide, studs 12" O.C.	G		34	.471		27.50	21.50		49	64
6430	16" O.C.	G		50	.320		21.50	14.65		36.15	46
6440	24" O.C.	G		69	.232		15.50	10.65		26.15	33.50
6530	14 ga. x 3-5/8" wide, studs 12" O.C.	G		34	.471		21	21.50		42.50	57
6540	16" O.C.	G		48	.333		16.55	15.30		31.85	42
6550	24" O.C.	G		65	.246		11.90	11.30		23.20	30.50
6560	4" wide, studs 12" O.C.	G		33	.485		22.50	22		44.50	59
6570	16" O.C.	G		47	.340		17.55	15.60		33.15	43.50
6580	24" O.C.	G		64	.250		12.65	11.45		24.10	31.50
6730	12 ga. x 3-5/8" wide, studs 12" O.C.	G		31	.516		29.50	23.50		53	69
6740	16" O.C.	G		43	.372		23	17.05		40.05	51.50
6750	24" O.C.	G		59	.271		16.05	12.45		28.50	37
6760	4" wide, studs 12" O.C.	G		30	.533		31.50	24.50		56	72
6770	16" O.C.	G		42	.381		24.50	17.45		41.95	53.50
6780	24" O.C.	G		58	.276		17.15	12.65		29.80	38.50
7390	16' high walls, 16 ga. x 6" wide, studs 12" O.C.	G		33	.485		28.50	22		50.50	66
7400	16" O.C.	G		48	.333		22.50	15.30		37.80	48
7410	24" O.C.	G		67	.239		15.80	10.95		26.75	34.50
7420	8" wide, studs 12" O.C.	G		32	.500		35.50	23		58.50	74.50
7430	16" O.C.	G		47	.340		27.50	15.60		43.10	54.50
7440	24" O.C.	G		66	.242		19.50	11.10		30.60	38.50
7560	14 ga. x 4" wide, studs 12" O.C.	G		31	.516		29	23.50		52.50	68.50

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.30 Framing, Stud Walls			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
7570	16" O.C.	G	2 Corp	45	.356	L.F.	22.50	16.30		38.80	49.50
7580	24" O.C.	G		61	.262		15.90	12.05		27.95	36
7590	6" wide, studs 12" O.C.	G		30	.533		36.50	24.50		61	77.50
7600	16" O.C.	G		44	.364		28.50	16.65		45.15	56.50
7610	24" O.C.	G		60	.267		20	12.25		32.25	41
7760	12 ga. x 4" wide, studs 12" O.C.	G		29	.552		41	25.50		66.50	84
7770	16" O.C.	G		40	.400		31.50	18.35		49.85	63
7780	24" O.C.	G		55	.291		22	13.35		35.35	44.50
7790	6" wide, studs 12" O.C.	G		28	.571		51.50	26		77.50	97.50
7800	16" O.C.	G		39	.410		39.50	18.80		58.30	72.50
7810	24" O.C.	G		54	.296		27.50	13.60		41.10	51.50
8590	20' high walls, 14 ga. x 6" wide, studs 12" O.C.	G		29	.552		45	25.50		70.50	88
8600	16" O.C.	G		42	.381		34.50	17.45		51.95	65
8610	24" O.C.	G		57	.281		24	12.85		36.85	46.50
8620	8" wide, studs 12" O.C.	G		28	.571		48.50	26		74.50	94
8630	16" O.C.	G		41	.390		37.50	17.90		55.40	68.50
8640	24" O.C.	G		56	.286		26.50	13.10		39.60	49
8790	12 ga. x 6" wide, studs 12" O.C.	G		27	.593		64	27		91	112
8800	16" O.C.	G		37	.432		48.50	19.85		68.35	84
8810	24" O.C.	G		51	.314		33.50	14.40		47.90	59
8820	8" wide, studs 12" O.C.	G		26	.615		77.50	28		105.50	129
8830	16" O.C.	G		36	.444		59	20.50		79.50	96.50
8840	24" O.C.	G		50	.320		41	14.65		55.65	67.50

05 42 Cold-Formed Metal Joist Framing

05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.05 Bracing

0010	BRACING, continuous, per row, top & bottom										
0015	Made from recycled materials										
0120	Flat strap, 20 ga. x 2" wide, joists at 12" O.C.	G	1 Corp	4.67	1.713	C.L.F.	55	78.50		133.50	182
0130	16" O.C.	G		5.33	1.501		53.50	69		122.50	165
0140	24" O.C.	G		6.66	1.201		51.50	55		106.50	142
0150	18 ga. x 2" wide, joists at 12" O.C.	G		4	2		74	91.50		165.50	224
0160	16" O.C.	G		4.67	1.713		73	78.50		151.50	201
0170	24" O.C.	G		5.33	1.501		71.50	69		140.50	185

05 42 13.10 Bridging

0010	BRIDGING, solid between joists w/1-1/4" leg track, per joist bay										
0015	Made from recycled materials										
0230	Joists 12" O.C., 18 ga. track x 6" wide	G	1 Corp	80	.100	Ea.	1.48	4.59		6.07	8.75
0240	8" wide	G		75	.107		1.84	4.89		6.73	9.55
0250	10" wide	G		70	.114		2.29	5.25		7.54	10.60
0260	12" wide	G		65	.123		2.60	5.65		8.25	11.55
0330	16 ga. track x 6" wide	G		70	.114		1.87	5.25		7.12	10.15
0340	8" wide	G		65	.123		2.34	5.65		7.99	11.30
0350	10" wide	G		60	.133		2.91	6.10		9.01	12.65
0360	12" wide	G		55	.145		3.35	6.65		10	14
0440	14 ga. track x 8" wide	G		60	.133		2.93	6.10		9.03	12.70
0450	10" wide	G		55	.145		3.64	6.65		10.29	14.30
0460	12" wide	G		50	.160		4.20	7.35		11.55	15.90
0550	12 ga. track x 10" wide	G		45	.178		5.35	8.15		13.50	18.45
0560	12" wide	G		40	.200		5.45	9.15		14.60	20

05 42 Cold-Formed Metal Joist Framing

05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.10 Bridging			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
1230	16" O.C., 18 ga. track x 6" wide	G	1 Corp	80	.100	Ea.	1.90	4.59		6.49	9.20
1240	8" wide	G		75	.107		2.36	4.89		7.25	10.15
1250	10" wide	G		70	.114		2.94	5.25		8.19	11.35
1260	12" wide	G		65	.123		3.33	5.65		8.98	12.35
1330	16 ga. track x 6" wide	G		70	.114		2.39	5.25		7.64	10.75
1340	8" wide	G		65	.123		3	5.65		8.65	12
1350	10" wide	G		60	.133		3.73	6.10		9.83	13.55
1360	12" wide	G		55	.145		4.29	6.65		10.94	15
1440	14 ga. track x 8" wide	G		60	.133		3.76	6.10		9.86	13.60
1450	10" wide	G		55	.145		4.67	6.65		11.32	15.45
1460	12" wide	G		50	.160		5.40	7.35		12.75	17.20
1550	12 ga. track x 10" wide	G		45	.178		6.85	8.15		15	20
1560	12" wide	G		40	.200		7	9.15		16.15	22
2230	24" O.C., 18 ga. track x 6" wide	G		80	.100		2.75	4.59		7.34	10.10
2240	8" wide	G		75	.107		3.41	4.89		8.30	11.30
2250	10" wide	G		70	.114		4.25	5.25		9.50	12.75
2260	12" wide	G		65	.123		4.82	5.65		10.47	14
2330	16 ga. track x 6" wide	G		70	.114		3.46	5.25		8.71	11.90
2340	8" wide	G		65	.123		4.34	5.65		9.99	13.50
2350	10" wide	G		60	.133		5.40	6.10		11.50	15.40
2360	12" wide	G		55	.145		6.20	6.65		12.85	17.15
2440	14 ga. track x 8" wide	G		60	.133		5.45	6.10		11.55	15.45
2450	10" wide	G		55	.145		6.75	6.65		13.40	17.75
2460	12" wide	G		50	.160		7.80	7.35		15.15	19.85
2550	12 ga. track x 10" wide	G		45	.178		9.90	8.15		18.05	23.50
2560	12" wide	G		40	.200		10.10	9.15		19.25	25.50

05 42 13.25 Framing, Band Joist

0010	FRAMING, BAND JOIST (track) fastened to bearing wall											
0015	Made from recycled materials											
0220	18 ga. track x 6" deep	G	2 Corp	1000	.016	L.F.		1.21	.73		1.94	2.46
0230	8" deep	G		920	.017			1.50	.80		2.30	2.88
0240	10" deep	G		860	.019			1.87	.85		2.72	3.38
0320	16 ga. track x 6" deep	G		900	.018			1.52	.82		2.34	2.93
0330	8" deep	G		840	.019			1.91	.87		2.78	3.45
0340	10" deep	G		780	.021			2.37	.94		3.31	4.06
0350	12" deep	G		740	.022			2.73	.99		3.72	4.53
0430	14 ga. track x 8" deep	G		750	.021			2.39	.98		3.37	4.14
0440	10" deep	G		720	.022			2.97	1.02		3.99	4.84
0450	12" deep	G		700	.023			3.42	1.05		4.47	5.40
0540	12 ga. track x 10" deep	G		670	.024			4.35	1.09		5.44	6.45
0550	12" deep	G		650	.025			4.45	1.13		5.58	6.65

05 42 13.30 Framing, Boxed Headers/Beams

0010	FRAMING, BOXED HEADERS/BEAMS											
0015	Made from recycled materials											
0200	Double, 18 ga. x 6" deep		2 Corp	220	.073	L.F.		5.10	3.33		8.43	10.75
0210	8" deep			210	.076			5.65	3.49		9.14	11.60
0220	10" deep			200	.080			6.90	3.67		10.57	13.25
0230	12" deep			190	.084			7.55	3.86		11.41	14.25
0300	16 ga. x 8" deep			180	.089			6.50	4.08		10.58	13.45
0310	10" deep			170	.094			7.90	4.32		12.22	15.30
0320	12" deep			160	.100			8.60	4.59		13.19	16.55
0400	14 ga. x 10" deep			140	.114			9.10	5.25		14.35	18.10

05 42 Cold-Formed Metal Joist Framing

05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.30 Framing, Boxed Headers/Beams

			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0410	12" deep		2 Carp	130	.123	L.F.	10	5.65		15.65	19.65
0500	12 ga. x 10" deep			110	.145		12	6.65		18.65	23.50
0510	12" deep			100	.160		13.25	7.35		20.60	26
1210	Triple, 18 ga. x 8" deep			170	.094		8.20	4.32		12.52	15.65
1220	10" deep			165	.097		9.85	4.45		14.30	17.70
1230	12" deep			160	.100		10.85	4.59		15.44	19
1300	16 ga. x 8" deep			145	.110		9.50	5.05		14.55	18.20
1310	10" deep			140	.114		11.35	5.25		16.60	20.50
1320	12" deep			135	.119		12.40	5.45		17.85	22
1400	14 ga. x 10" deep			115	.139		13.15	6.40		19.55	24.50
1410	12" deep			110	.145		14.50	6.65		21.15	26.50
1500	12 ga. x 10" deep			90	.178		17.50	8.15		25.65	32
1510	12" deep			85	.188		19.40	8.65		28.05	35

05 42 13.40 Framing, Joists

0010	FRAMING, JOISTS, no band jaists (track), web stiffeners, headers,										
0020	Beams, bridging or bracing										
0025	Made from recycled materials										
0030	Jaists (2" flange) and fasteners, materials only										
0220	18 ga. x 6" deep					L.F.	1.58			1.58	1.73
0230	8" deep						1.86			1.86	2.04
0240	10" deep						2.18			2.18	2.40
0320	16 ga. x 6" deep						1.93			1.93	2.13
0330	8" deep						2.31			2.31	2.54
0340	10" deep						2.70			2.70	2.97
0350	12" deep						3.07			3.07	3.37
0430	14 ga. x 8" deep						2.90			2.90	3.19
0440	10" deep						3.34			3.34	3.67
0450	12" deep						3.80			3.80	4.18
0540	12 ga. x 10" deep						4.86			4.86	5.35
0550	12" deep						5.50			5.50	6.10
1010	Installation of jaists to band jaists, beams & headers, labor only										
1220	18 ga. x 6" deep		2 Carp	110	.145	Ea.		6.65		6.65	10.30
1230	8" deep			90	.178			8.15		8.15	12.60
1240	10" deep			80	.200			9.15		9.15	14.15
1320	16 ga. x 6" deep			95	.168			7.70		7.70	11.90
1330	8" deep			70	.229			10.50		10.50	16.15
1340	10" deep			60	.267			12.25		12.25	18.85
1350	12" deep			55	.291			13.35		13.35	20.50
1430	14 ga. x 8" deep			65	.246			11.30		11.30	17.40
1440	10" deep			45	.356			16.30		16.30	25
1450	12" deep			35	.457			21		21	32.50
1540	12 ga. x 10" deep			40	.400			18.35		18.35	28.50
1550	12" deep			30	.533			24.50		24.50	37.50

05 42 13.45 Framing, Web Stiffeners

0010	FRAMING, WEB STIFFENERS at jaist bearing, fabricated from										
0020	Stud piece (1-5/8" flange) to stiffen jaist (2" flange)										
0025	Made from recycled materials										
2120	For 6" deep jaist, with 18 ga. x 2-1/2" stud		1 Carp	120	.067	Ea.	.85	3.06		3.91	5.65
2130	3-5/8" stud			110	.073		1	3.33		4.33	6.25
2140	4" stud			105	.076		1.05	3.49		4.54	6.55
2150	6" stud			100	.080		1.32	3.67		4.99	7.10
2160	8" stud			95	.084		1.60	3.86		5.46	7.70

05 42 Cold-Formed Metal Joist Framing

05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.45 Framing, Web Stiffeners

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
2220	8" deep joist, with 2-1/2" stud	G	1 Corp	120	.067	Eo.	1.14	3.06		4.20	5.95
2230	3-5/8" stud	G		110	.073		1.34	3.33		4.67	6.60
2240	4" stud	G		105	.076		1.41	3.49		4.90	6.95
2250	6" stud	G		100	.080		1.77	3.67		5.44	7.60
2260	8" stud	G		95	.084		2.14	3.86		6	8.30
2320	10" deep joist, with 2-1/2" stud	G		110	.073		1.41	3.33		4.74	6.70
2330	3-5/8" stud	G		100	.080		1.66	3.67		5.33	7.50
2340	4" stud	G		95	.084		1.74	3.86		5.60	7.85
2350	6" stud	G		90	.089		2.19	4.08		6.27	8.70
2360	8" stud	G		85	.094		2.66	4.32		6.98	9.55
2420	12" deep joist, with 2-1/2" stud	G		110	.073		1.70	3.33		5.03	7
2430	3-5/8" stud	G		100	.080		2	3.67		5.67	7.85
2440	4" stud	G		95	.084		2.10	3.86		5.96	8.25
2450	6" stud	G		90	.089		2.64	4.08		6.72	9.20
2460	8" stud	G		85	.094		3.20	4.32		7.52	10.15
3130	For 6" deep joist, with 16 go. x 3-5/8" stud	G		100	.080		1.25	3.67		4.92	7.05
3140	4" stud	G		95	.084		1.31	3.86		5.17	7.40
3150	6" stud	G		90	.089		1.62	4.08		5.70	8.10
3160	8" stud	G		85	.094		2	4.32		6.32	8.85
3230	8" deep joist, with 3-5/8" stud	G		100	.080		1.68	3.67		5.35	7.50
3240	4" stud	G		95	.084		1.76	3.86		5.62	7.90
3250	6" stud	G		90	.089		2.17	4.08		6.25	8.70
3260	8" stud	G		85	.094		2.68	4.32		7	9.60
3330	10" deep joist, with 3-5/8" stud	G		85	.094		2.08	4.32		6.40	8.95
3340	4" stud	G		80	.100		2.17	4.59		6.76	9.50
3350	6" stud	G		75	.107		2.69	4.89		7.58	10.50
3360	8" stud	G		70	.114		3.32	5.25		8.57	11.75
3430	12" deep joist, with 3-5/8" stud	G		85	.094		2.50	4.32		6.82	9.40
3440	4" stud	G		80	.100		2.62	4.59		7.21	10
3450	6" stud	G		75	.107		3.24	4.89		8.13	11.10
3460	8" stud	G		70	.114		4	5.25		9.25	12.50
4230	For 8" deep joist, with 14 go. x 3-5/8" stud	G		90	.089		2.08	4.08		6.16	8.60
4240	4" stud	G		85	.094		2.20	4.32		6.52	9.05
4250	6" stud	G		80	.100		2.76	4.59		7.35	10.15
4260	8" stud	G		75	.107		2.95	4.89		7.84	10.80
4330	10" deep joist, with 3-5/8" stud	G		75	.107		2.57	4.89		7.46	10.40
4340	4" stud	G		70	.114		2.72	5.25		7.97	11.10
4350	6" stud	G		65	.123		3.42	5.65		9.07	12.45
4360	8" stud	G		60	.133		3.65	6.10		9.75	13.45
4430	12" deep joist, with 3-5/8" stud	G		75	.107		3.10	4.89		7.99	10.95
4440	4" stud	G		70	.114		3.28	5.25		8.53	11.70
4450	6" stud	G		65	.123		4.12	5.65		9.77	13.25
4460	8" stud	G		60	.133		4.40	6.10		10.50	14.30
5330	For 10" deep joist, with 12 go. x 3-5/8" stud	G		65	.123		3.72	5.65		9.37	12.80
5340	4" stud	G		60	.133		3.97	6.10		10.07	13.80
5350	6" stud	G		55	.145		5	6.65		11.65	15.80
5360	8" stud	G		50	.160		6.05	7.35		13.40	17.95
5430	12" deep joist, with 3-5/8" stud	G		65	.123		4.48	5.65		10.13	13.65
5440	4" stud	G		60	.133		4.78	6.10		10.88	14.70
5450	6" stud	G		55	.145		6	6.65		12.65	16.90
5460	8" stud	G		50	.160		7.30	7.35		14.65	19.30

05 42 Cold-Formed Metal Joist Framing

05 42 23 – Cold-Formed Metal Roof Joist Framing

05 42 23.05 Framing, Bracing				Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	FRAMING, BRACING											
0015	Made from recycled materials											
0020	Continuous bracing, per row											
0100	16 ga. x 1-1/2" channel thru rafters/trusses @ 16" O.C.		1 Carp	4.50	1.778	C.L.F.		48	81.50		129.50	179
0120	24" O.C.			6	1.333			48	61		109	148
0300	2" x 2" angle x 18 ga., rafters/trusses @ 16" O.C.			6	1.333			75	61		136	177
0320	24" O.C.			8	1			75	46		121	154
0400	16 ga., rafters/trusses @ 16" O.C.			4.50	1.778			94.50	81.50		176	230
0420	24" O.C.			6.50	1.231			94.50	56.50		151	191

05 42 23.10 Framing, Bridging

0010	FRAMING, BRIDGING											
0015	Made from recycled materials											
0020	Solid, between rafters w/1-1/4" leg track, per rafter bay											
1200	Rafters 16" O.C., 18 ga. x 4" deep		1 Carp	60	.133	Ea.		1.45	6.10		7.55	11.05
1210	6" deep			57	.140			1.90	6.45		8.35	12.05
1220	8" deep			55	.145			2.36	6.65		9.01	12.90
1230	10" deep			52	.154			2.94	7.05		9.99	14.15
1240	12" deep			50	.160			3.33	7.35		10.68	14.95
2200	24" O.C., 18 ga. x 4" deep			60	.133			2.10	6.10		8.20	11.75
2210	6" deep			57	.140			2.75	6.45		9.20	12.95
2220	8" deep			55	.145			3.41	6.65		10.06	14.05
2230	10" deep			52	.154			4.25	7.05		11.30	15.55
2240	12" deep			50	.160			4.82	7.35		12.17	16.60

05 42 23.50 Framing, Parapets

0010	FRAMING, PARAPETS											
0015	Made from recycled materials											
0100	3' high installed on 1st story, 18 ga. x 4" wide studs, 12" O.C.		2 Carp	100	.160	L.F.		5.30	7.35		12.65	17.15
0110	16" O.C.			150	.107			4.52	4.89		9.41	12.50
0120	24" O.C.			200	.080			3.73	3.67		7.40	9.75
0200	6" wide studs, 12" O.C.			100	.160			6.80	7.35		14.15	18.75
0210	16" O.C.			150	.107			5.80	4.89		10.69	13.90
0220	24" O.C.			200	.080			4.80	3.67		8.47	10.95
1100	Installed on 2nd story, 18 ga. x 4" wide studs, 12" O.C.			95	.168			5.30	7.70		13	17.75
1110	16" O.C.			145	.110			4.52	5.05		9.57	12.75
1120	24" O.C.			190	.084			3.73	3.86		7.59	10.05
1200	6" wide studs, 12" O.C.			95	.168			6.80	7.70		14.50	19.35
1210	16" O.C.			145	.110			5.80	5.05		10.85	14.15
1220	24" O.C.			190	.084			4.80	3.86		8.66	11.25
2100	Installed on gable, 18 ga. x 4" wide studs, 12" O.C.			85	.188			5.30	8.65		13.95	19.15
2110	16" O.C.			130	.123			4.52	5.65		10.17	13.65
2120	24" O.C.			170	.094			3.73	4.32		8.05	10.75
2200	6" wide studs, 12" O.C.			85	.188			6.80	8.65		15.45	21
2210	16" O.C.			130	.123			5.80	5.65		11.45	15.05
2220	24" O.C.			170	.094			4.80	4.32		9.12	11.95

05 42 23.60 Framing, Roof Rafters

0010	FRAMING, ROOF RAFTERS											
0015	Made from recycled materials											
0100	Boxed ridge beam, double, 18 ga. x 6" deep		2 Carp	160	.100	L.F.		5.10	4.59		9.69	12.70
0110	8" deep			150	.107			5.65	4.89		10.54	13.75
0120	10" deep			140	.114			6.90	5.25		12.15	15.70
0130	12" deep			130	.123			7.55	5.65		13.20	17

05 42 Cold-Formed Metal Joist Framing

05 42 23 – Cold-Formed Metal Roof Joist Framing

05 42 23.60 Framing, Roof Rafters		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0200	16 ga. x 6" deep		2 Carp	150	.107	L.F.	5.80	4.89	10.69	13.90
0210	8" deep			140	.114		6.50	5.25	11.75	15.25
0220	10" deep			130	.123		7.90	5.65	13.55	17.35
0230	12" deep			120	.133		8.60	6.10	14.70	18.90
1100	Rafters, 2" flange, material only, 18 ga. x 6" deep						1.58		1.58	1.73
1110	8" deep						1.86		1.86	2.04
1120	10" deep						2.18		2.18	2.40
1130	12" deep						2.52		2.52	2.77
1200	16 ga. x 6" deep						1.93		1.93	2.13
1210	8" deep						2.31		2.31	2.54
1220	10" deep						2.70		2.70	2.97
1230	12" deep						3.07		3.07	3.37
2100	Installation only, ordinary rafter to 4:12 pitch, 18 ga. x 6" deep		2 Carp	35	.457	Ea.		21	21	32.50
2110	8" deep			30	.533			24.50	24.50	37.50
2120	10" deep			25	.640			29.50	29.50	45.50
2130	12" deep			20	.800			36.50	36.50	56.50
2200	16 ga. x 6" deep			30	.533			24.50	24.50	37.50
2210	8" deep			25	.640			29.50	29.50	45.50
2220	10" deep			20	.800			36.50	36.50	56.50
2230	12" deep			15	1.067			49	49	75.50
8100	Add to labor, ordinary rafters on steep roofs						25%			
8110	Darmers & complex roofs						50%			
8200	Hip & valley rafters to 4:12 pitch						25%			
8210	Steep roofs						50%			
8220	Darmers & complex roofs						75%			
8300	Hip & valley jack rafters to 4:12 pitch						50%			
8310	Steep roofs						75%			
8320	Darmers & complex roofs						100%			

05 42 23.70 Framing, Soffits and Canopies

0010	FRAMING, SOFFITS & CANOPIES									
0015	Made from recycled materials									
0130	Continuous ledger track @ wall, studs @ 16" O.C., 18 ga. x 4" wide		2 Carp	535	.030	L.F.	.97	1.37	2.34	3.18
0140	6" wide			500	.032		1.27	1.47	2.74	3.65
0150	8" wide			465	.034		1.57	1.58	3.15	4.16
0160	10" wide			430	.037		1.96	1.71	3.67	4.78
0230	Studs @ 24" O.C., 18 ga. x 4" wide			800	.020		.92	.92	1.84	2.44
0240	6" wide			750	.021		1.21	.98	2.19	2.84
0250	8" wide			700	.023		1.50	1.05	2.55	3.27
0260	10" wide			650	.025		1.87	1.13	3	3.80
1000	Horizontal soffit and canopy members, material only									
1030	1-5/8" flange studs, 18 ga. x 4" deep					L.F.	1.26		1.26	1.39
1040	6" deep						1.58		1.58	1.74
1050	8" deep						1.92		1.92	2.11
1140	2" flange joists, 18 ga. x 6" deep						1.80		1.80	1.98
1150	8" deep						2.12		2.12	2.34
1160	10" deep						2.50		2.50	2.75
4030	Installation only, 18 ga., 1-5/8" flange x 4" deep		2 Carp	130	.123	Ea.		5.65	5.65	8.70
4040	6" deep			110	.145			6.65	6.65	10.30
4050	8" deep			90	.178			8.15	8.15	12.60
4140	2" flange, 18 ga. x 6" deep			110	.145			6.65	6.65	10.30
4150	8" deep			90	.178			8.15	8.15	12.60
4160	10" deep			80	.200			9.15	9.15	14.15

05 42 Cold-Formed Metal Joist Framing

05 42 23 – Cold-Formed Metal Roof Joist Framing

05 42 23.70 Framing, Soffits and Canopies		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6010	Clips to attach fascia to rafter tails, 2" x 2" x 18 ga. angle	G	1 Carp	120	.067	Ea.	.88	3.06	3.94	5.70
6020	16 ga. angle	G	"	100	.080		1.12	3.67	4.79	6.90

05 44 Cold-Formed Metal Trusses

05 44 13 – Cold-Formed Metal Roof Trusses

05 44 13.60 Framing, Roof Trusses

0010	FRAMING, ROOF TRUSSES										
0015	Made from recycled materials										
0020	Fabrication of trusses on ground, Fink (W) or King Post, to 4:12 pitch										
0120	18 ga. x 4" chords, 16' span	G	2 Carp	12	1.333	Ea.	59	61		120	159
0130	20' span	G		11	1.455		73.50	66.50		140	184
0140	24' span	G		11	1.455		88	66.50		154.50	200
0150	28' span	G		10	1.600		103	73.50		176.50	226
0160	32' span	G		10	1.600		118	73.50		191.50	242
0250	6" chords, 28' span	G		9	1.778		129	81.50		210.50	268
0260	32' span	G		9	1.778		148	81.50		229.50	289
0270	36' span	G		8	2		166	91.50		257.50	325
0280	40' span	G		8	2		185	91.50		276.50	345
1120	5:12 to 8:12 pitch, 18 ga. x 4" chords, 16' span	G		10	1.600		67	73.50		140.50	187
1130	20' span	G		9	1.778		84	81.50		165.50	219
1140	24' span	G		9	1.778		101	81.50		182.50	237
1150	28' span	G		8	2		118	91.50		209.50	271
1160	32' span	G		8	2		134	91.50		225.50	290
1250	6" chords, 28' span	G		7	2.286		148	105		253	325
1260	32' span	G		7	2.286		169	105		274	350
1270	36' span	G		6	2.667		190	122		312	400
1280	40' span	G		6	2.667		211	122		333	420
2120	9:12 to 12:12 pitch, 18 ga. x 4" chords, 16' span	G		8	2		84	91.50		175.50	235
2130	20' span	G		7	2.286		105	105		210	278
2140	24' span	G		7	2.286		126	105		231	300
2150	28' span	G		6	2.667		147	122		269	350
2160	32' span	G		6	2.667		168	122		290	375
2250	6" chords, 28' span	G		5	3.200		185	147		332	430
2260	32' span	G		5	3.200		211	147		358	460
2270	36' span	G		4	4		238	183		421	545
2280	40' span	G		4	4		264	183		447	575
5120	Erection only of roof trusses, to 4:12 pitch, 16' span		F-6	48	.833			36	13.80	49.80	70
5130	20' span			46	.870			37.50	14.40	51.90	73.50
5140	24' span			44	.909			39	15.05	54.05	76.50
5150	28' span			42	.952			41	15.80	56.80	80.50
5160	32' span			40	1			43	16.60	59.60	84.50
5170	36' span			38	1.053			45.50	17.45	62.95	88.50
5180	40' span			36	1.111			48	18.40	66.40	94
5220	5:12 to 8:12 pitch, 16' span			42	.952			41	15.80	56.80	80.50
5230	20' span			40	1			43	16.60	59.60	84.50
5240	24' span			38	1.053			45.50	17.45	62.95	88.50
5250	28' span			36	1.111			48	18.40	66.40	94
5260	32' span			34	1.176			50.50	19.50	70	99.50
5270	36' span			32	1.250			54	20.50	74.50	106
5280	40' span			30	1.333			57.50	22	79.50	113
5320	9:12 to 12:12 pitch, 16' span			36	1.111			48	18.40	66.40	94

05 44 Cold-Formed Metal Trusses

05 44 13 – Cold-Formed Metal Roof Trusses

05 44 13.60 Framing, Roof Trusses

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5330	20' span	F-6	34	1.176	Ea.		50.50	19.50	70	99.50
5340	24' span		32	1.250			54	20.50	74.50	106
5350	28' span		30	1.333			57.50	22	79.50	113
5360	32' span		28	1.429			61.50	23.50	85	121
5370	36' span		26	1.538			66	25.50	91.50	130
5380	40' span	▼	24	1.667	▼		72	27.50	99.50	141

05 51 Metal Stairs

05 51 13 – Metal Pan Stairs

05 51 13.50 Pan Stairs

0010	PAN STAIRS , shap fabricated, steel stringers										
0015	Made from recycled materials										
0200	Cement fill metal pan, picket rail, 3'-6" wide	G	E-4	35	.914	Riser	500	47	4.06	551.06	640
0300	4'-0" wide	G		30	1.067		560	55	4.74	619.74	715
0350	Wall rail, bath sides, 3'-6" wide	G		53	.604	▼	380	31	2.68	413.68	480
1500	Landing, steel pan, conventional	G		160	.200	S.F.	66	10.30	.89	77.19	92
1600	Pre-erected	G	▼	255	.125	"	118	6.50	.56	125.06	142
1700	Pre-erected, steel pan tread, 3'-6" wide, 2 line pipe rail	G	E-2	87	.644	Riser	550	32.50	17.55	600.05	680

05 51 16 – Metal Floor Plate Stairs

05 51 16.50 Floor Plate Stairs

0010	FLOOR PLATE STAIRS , shap fabricated, steel stringers										
0015	Made from recycled materials										
0400	Cast iron tread and pipe rail, 3'-6" wide	G	E-4	35	.914	Riser	535	47	4.06	586.06	675
0500	Checkered plate tread, industrial, 3'-6" wide	G		28	1.143		330	59	5.05	394.05	470
0550	Circular, for tanks, 3'-0" wide	G	▼	33	.970		370	50	4.31	424.31	500
0600	For isolated stairs, add							100%			
0800	Custom steel stairs, 3'-6" wide, economy	G	E-4	35	.914		500	47	4.06	551.06	640
0810	Medium priced	G		30	1.067		660	55	4.74	719.74	830
0900	Deluxe	G		20	1.600		825	82.50	7.10	914.60	1,075
1100	For 4' wide stairs, add						5%	5%			
1300	For 5' wide stairs, add					▼	10%	10%			

05 51 19 – Metal Grating Stairs

05 51 19.50 Grating Stairs

0010	GRATING STAIRS , shap fabricated, steel stringers, safety nosing on treads										
0015	Made from recycled materials										
0020	Grating tread and pipe railing, 3'-6" wide	G	E-4	35	.914	Riser	330	47	4.06	381.06	450
0100	4'-0" wide	G	"	30	1.067	"	430	55	4.74	489.74	575

05 51 23 – Metal Fire Escapes

05 51 23.25 Fire Escapes

0010	FIRE ESCAPES , shap fabricated										
0200	2' wide balcony, 1" x 1/4" bars 1-1/2" O.C., with railing	G	2 Sswk	10	1.600	L.F.	58.50	82		140.50	209
0400	1st story cantilevered stair, standard, with railing	G		.50	32	Ea.	2,425	1,625		4,050	5,550
0500	Cable counterweighted, with railing	G		.40	40	"	2,250	2,050		4,300	6,075
0700	36" x 40" platform & fixed stair, with railing	G	▼	.40	40	Flight	1,075	2,050		3,125	4,775
0900	For 3'-6" wide escapes, add to above						100%	150%			

05 52 Metal Railings

05 52 13 – Pipe and Tube Railings

05 52 13.50 Railings, Pipe

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0700	Stainless steel, 2 rail, 1-1/4" diam. #4 finish	G	E-4	137	.234	L.F.	110	12.05	1.04	123.09	144
0720	High polish	G		137	.234		178	12.05	1.04	191.09	219
0740	Mirror polish	G		137	.234		223	12.05	1.04	236.09	268
0760	Stainless steel, 3 rail, 1-1/2" diam., #4 finish	G		120	.267		166	13.75	1.18	180.93	209
0770	High polish	G		120	.267		275	13.75	1.18	289.93	330
0780	Mirror finish	G		120	.267		335	13.75	1.18	349.93	395
0900	Wall rail, alum. pipe, 1-1/4" diam., satin finish	G		213	.150		20	7.75	.67	28.42	36.50
0905	Clear anodized	G		213	.150		25	7.75	.67	33.42	42
0910	Dark anodized	G		213	.150		29.50	7.75	.67	37.92	47
0915	1-1/2" diameter, satin finish	G		213	.150		22.50	7.75	.67	30.92	39.50
0920	Clear anodized	G		213	.150		28	7.75	.67	36.42	45.50
0925	Dark anodized	G		213	.150		35	7.75	.67	43.42	53
0930	Steel pipe, 1-1/4" diameter, primed	G		213	.150		15	7.75	.67	23.42	31
0935	Galvanized	G		213	.150		22	7.75	.67	30.42	38.50
0940	1-1/2" diameter	G		176	.182		15.50	9.40	.81	25.71	34.50
0945	Galvanized	G		213	.150		22	7.75	.67	30.42	38.50
0955	Stainless steel pipe, 1-1/2" diam., #4 finish	G		107	.299		88	15.45	1.33	104.78	125
0960	High polish	G		107	.299		179	15.45	1.33	195.78	225
0965	Mirror polish	G		107	.299		212	15.45	1.33	228.78	261
2000	2-line pipe rail (1-1/2" T&B) with 1/2" pickets @ 4-1/2" O.C.,										
2005	attached handrail on brackets										
2010	42" high aluminum, satin finish, straight & level	G	E-4	120	.267	L.F.	198	13.75	1.18	212.93	244
2050	42" high steel, primed, straight & level	G	"	120	.267		127	13.75	1.18	141.93	166
4000	For curved and level rails, add						10%	10%			
4100	For sloped rails for stairs, add						30%	30%			

05 52 16 – Industrial Railings

05 52 16.50 Railings, Industrial

0010	RAILINGS, INDUSTRIAL , shop fab'd, 3'-6" high, posts @ 5' O.C.										
0020	2 rail, 3'-6" high, 1-1/2" pipe	G	E-4	255	.125	L.F.	27	6.50	.56	34.06	42
0100	2" angle rail	G	"	255	.125		25	6.50	.56	32.06	39.50
0200	For 4" high kick plate, 10 ga., add	G					5.65			5.65	6.20
0300	1/4" thick, add	G					7.40			7.40	8.15
0500	For curved level rails, add						10%	10%			
0550	For sloped rails for stairs, add						30%	30%			

05 53 Metal Gratings

05 53 13 – Bar Gratings

05 53 13.10 Floor Grating, Aluminum

0010	FLOOR GRATING, ALUMINUM , field fabricated from panels										
0015	Made from recycled materials										
0110	Bearing bars @ 1-3/16" O.C., cross bars @ 4" O.C.,										
0111	Up to 300 S.F., 1" x 1/8" bar	G	E-4	900	.036	S.F.	16.90	1.83	.16	18.89	22
0112	Over 300 S.F.	G		850	.038		15.35	1.94	.17	17.46	20.50
0113	1-1/4" x 1/8" bar, up to 300 S.F.	G		800	.040		17.55	2.06	.18	19.79	23
0114	Over 300 S.F.	G		1000	.032		15.95	1.65	.14	17.74	20.50
0122	1-1/4" x 3/16" bar, up to 300 S.F.	G		750	.043		27	2.20	.19	29.39	33.50
0124	Over 300 S.F.	G		1000	.032		24.50	1.65	.14	26.29	30
0132	1-1/2" x 3/16" bar, up to 300 S.F.	G		700	.046		31	2.36	.20	33.56	38.50
0134	Over 300 S.F.	G		1000	.032		28.50	1.65	.14	30.29	34
0136	1-3/4" x 3/16" bar, up to 300 S.F.	G		500	.064		34.50	3.30	.28	38.08	44

05 53 Metal Gratings

05 53 13 – Bar Gratings

05 53 13.10 Floor Grating, Aluminum				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0138	Over 300 S.F.	G		E-4	1000	.032	S.F.	31.50	1.65	.14	33.29	37.50
0146	2-1/4" x 3/16" bar, up to 300 S.F.	G			600	.053		44	2.75	.24	46.99	53
0148	Over 300 S.F.	G			1000	.032		40	1.65	.14	41.79	47
0162	Cross bars @ 2" O.C., 1" x 1/8", up to 300 S.F.	G			600	.053		29.50	2.75	.24	32.49	37.50
0164	Over 300 S.F.	G			1000	.032		27	1.65	.14	28.79	32.50
0172	1-1/4" x 3/16" bar, up to 300 S.F.	G			600	.053		48.50	2.75	.24	51.49	58
0174	Over 300 S.F.	G			1000	.032		44	1.65	.14	45.79	51.50
0182	1-1/2" x 3/16" bar, up to 300 S.F.	G			600	.053		55.50	2.75	.24	58.49	66
0184	Over 300 S.F.	G			1000	.032		50.50	1.65	.14	52.29	58.50
0186	1-3/4" x 3/16" bar, up to 300 S.F.	G			600	.053		60	2.75	.24	62.99	71
0188	Over 300 S.F.	G			1000	.032		54.50	1.65	.14	56.29	63
0200	For straight cuts, add						L.F.	4.30			4.30	4.73
0300	For curved cuts, odd							5.30			5.30	5.85
0400	For straight banding, odd	G						5.50			5.50	6.05
0500	For curved banding, add	G						6.60			6.60	7.25
0600	For aluminum checkered plate nosings, odd	G						7.15			7.15	7.85
0700	For straight toe plate, add	G						10.80			10.80	11.90
0800	For curved toe plate, add	G						12.60			12.60	13.85
1000	For cast aluminum abrasive nosings, add	G						10.50			10.50	11.55
1200	Expanded aluminum, .65# per S.F.	G		E-4	1050	.030	S.F.	11.90	1.57	.14	13.61	16.05
1400	Extruded I bars are 10% less than 3/16" bars											
1600	Heavy duty, all extruded plank, 3/4" deep, 1.8# per S.F.	G		E-4	1100	.029	S.F.	26	1.50	.13	27.63	31.50
1700	1-1/4" deep, 2.9# per S.F.	G			1000	.032		28	1.65	.14	29.79	34
1800	1-3/4" deep, 4.2# per S.F.	G			925	.035		39.50	1.78	.15	41.43	47
1900	2-1/4" deep, 5.0# per S.F.	G			875	.037		60.50	1.89	.16	62.55	70
2100	For safety serrated surface, add							15%				

05 53 13.70 Floor Grating, Steel

0010	FLOOR GRATING, STEEL, field fabricated from panels											
0015	Made from recycled materials											
0300	Platforms, to 12' high, rectangular	G		E-4	3150	.010	Lb.	3.21	.52	.05	3.78	4.51
0400	Circular	G		"	2300	.014	"	4.01	.72	.06	4.79	5.75
0410	Painted bearing bars @ 1-3/16"											
0412	Cross bars @ 4" O.C., 3/4" x 1/8" bar, up to 300 S.F.	G		E-2	500	.112	S.F.	7.70	5.60	3.06	16.36	21.50
0414	Over 300 S.F.	G			750	.075		7	3.75	2.04	12.79	16.30
0422	1-1/4" x 3/16", up to 300 S.F.	G			400	.140		11.85	7.05	3.82	22.72	29
0424	Over 300 S.F.	G			600	.093		10.80	4.68	2.55	18.03	22.50
0432	1-1/2" x 3/16", up to 300 S.F.	G			400	.140		13.60	7.05	3.82	24.47	31
0434	Over 300 S.F.	G			600	.093		12.35	4.68	2.55	19.58	24.50
0436	1-3/4" x 3/16", up to 300 S.F.	G			400	.140		17.80	7.05	3.82	28.67	35.50
0438	Over 300 S.F.	G			600	.093		16.15	4.68	2.55	23.38	28.50
0452	2-1/4" x 3/16", up to 300 S.F.	G			300	.187		22	9.35	5.10	36.45	46
0454	Over 300 S.F.	G			450	.124		20	6.25	3.40	29.65	36.50
0462	Cross bars @ 2" O.C., 3/4" x 1/8", up to 300 S.F.	G			500	.112		15.15	5.60	3.06	23.81	29.50
0464	Over 300 S.F.	G			750	.075		12.60	3.75	2.04	18.39	22.50
0472	1-1/4" x 3/16", up to 300 S.F.	G			400	.140		19.80	7.05	3.82	30.67	38
0474	Over 300 S.F.	G			600	.093		16.50	4.68	2.55	23.73	29
0482	1-1/2" x 3/16", up to 300 S.F.	G			400	.140		22.50	7.05	3.82	33.37	40.50
0484	Over 300 S.F.	G			600	.093		18.60	4.68	2.55	25.83	31.50
0486	1-3/4" x 3/16", up to 300 S.F.	G			400	.140		33.50	7.05	3.82	44.37	53
0488	Over 300 S.F.	G			600	.093		28	4.68	2.55	35.23	42
0502	2-1/4" x 3/16", up to 300 S.F.	G			300	.187		33	9.35	5.10	47.45	57.50
0504	Over 300 S.F.	G			450	.124		27.50	6.25	3.40	37.15	44.50

05 53 Metal Gratings

05 53 13 – Bar Gratings

05 53 13.70 Floor Grating, Steel

						Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Inc O&P
											Labor	Equipment		
0690	For galvanized grating, add			S.F.	25%									
0800	For straight cuts, add			L.F.	6.15								6.15	6.75
0900	For curved cuts, add				7.80								7.80	8.60
1000	For straight banding, add	G			6.60								6.60	7.25
1100	For curved banding, add	G			8.70								8.70	9.55
1200	For checkered plate nosings, add	G			7.65								7.65	8.40
1300	For straight toe or kick plate, add	G			13.70								13.70	15.05
1400	For curved toe or kick plate, add	G			15.50								15.50	17.05
1500	For abrasive nosings, add	G			10.15								10.15	11.15
1510	For stair treads, see Section 05 55 13.50													
1600	For safety serrated surface, bearing bars @ 1-3/16" O.C., add				15%									
1700	Bearing bars @ 15/16" O.C., add				25%									
2000	Stainless steel gratings, close spaced, 1" x 1/8" bars, up to 300 S.F.	G	E-4	450	.071	S.F.	73	3.67	.32	76.99				87.50
2100	Standard spacing, 3/4" x 1/8" bars	G		500	.064		84	3.30	.28	87.58				98
2200	1-1/4" x 3/16" bars	G		400	.080		80	4.13	.36	84.49				95.50
2400	Expanded steel grating, at ground, 3.0# per S.F.	G		900	.036		8.05	1.83	.16	10.04				12.30
2500	3.14# per S.F.	G		900	.036		7.15	1.83	.16	9.14				11.30
2600	4.0# per S.F.	G		850	.038		8.60	1.94	.17	10.71				13.10
2650	4.27# per S.F.	G		850	.038		9.30	1.94	.17	11.41				13.85
2700	5.0# per S.F.	G		800	.040		13.80	2.06	.18	16.04				19
2800	6.25# per S.F.	G		750	.043		17.80	2.20	.19	20.19				23.50
2900	7.0# per S.F.	G		700	.046		19.65	2.36	.20	22.21				26
3100	For flattened expanded steel grating, add				8%									
3300	For elevated installation above 15', add										15%			

05 53 16 – Plank Gratings

05 53 16.50 Grating Planks

0010	GRATING PLANKS, field fabricated from planks													
0020	Aluminum, 9-1/2" wide, 14 ga., 2" rib	G	E-4	950	.034	L.F.	25.50	1.74	.15	27.39				31.50
0200	Galvanized steel, 9-1/2" wide, 14 ga., 2-1/2" rib	G		950	.034		16.80	1.74	.15	18.69				21.50
0300	4" rib	G		950	.034		18.50	1.74	.15	20.39				23.50
0500	12 ga., 2-1/2" rib	G		950	.034		16.55	1.74	.15	18.44				21.50
0600	3" rib	G		950	.034		22.50	1.74	.15	24.39				27.50
0800	Stainless steel, type 304, 16 ga., 2" rib	G		950	.034		39	1.74	.15	40.89				46
0900	Type 316	G		950	.034		57	1.74	.15	58.89				66

05 53 19 – Floor Grating Frame

05 53 19.30 Grating Frame

0010	GRATING FRAME, field fabricated													
0020	Aluminum, for gratings 1" to 1-1/2" deep	G	1 Sswk	70	.114	L.F.	3.72	5.85		9.57				14.40
0100	For each corner, add	G				Ea.	5.60			5.60				6.15

05 54 Metal Floor Plates

05 54 13 – Floor Plates

05 54 13.20 Checkered Plates			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	CHECKERED PLATES , steel, field fabricated										
0015	Made from recycled materials										
0020	1/4" & 3/8", 2000 to 5000 S.F., bolted		E-4	2900	.011	Lb.	.87	.57	.05	1.49	2.01
0100	Welded			4400	.007	"	.83	.38	.03	1.24	1.61
0300	Pit or trench cover and frame, 1/4" plate, 2' to 3' wide		▼	100	.320	S.F.	11.05	16.50	1.42	28.97	42.50
0400	For galvanizing, add					Lb.	.29			.29	.32
0500	Platforms, 1/4" plate, no handrails included, rectangular		E-4	4200	.008		3.21	.39	.03	3.63	4.26
0600	Circular		"	2500	.013	▼	4.01	.66	.06	4.73	5.65

05 54 13.70 Trench Covers

0010	TRENCH COVERS , field fabricated										
0020	Cast iron grating with bar stops and angle frame, to 18" wide		1 Sswk	20	.400	L.F.	235	20.50		255.50	294
0100	Frame only (both sides of trench), 1" grating			45	.178		1.38	9.10		10.48	17.55
0150	2" grating		▼	35	.229	▼	3.27	11.70		14.97	24
0200	Aluminum, stock units, including frames and										
0210	3/8" plain cover plate, 4" opening		E-4	205	.156	L.F.	22.50	8.05	.69	31.24	39.50
0300	6" opening			185	.173		27	8.95	.77	36.72	46
0400	10" opening			170	.188		36	9.70	.84	46.54	57.50
0500	16" opening		▼	155	.206		50	10.65	.92	61.57	75
0700	Add per inch for additional widths to 24"						2.06			2.06	2.27
0900	For custom fabrication, add						50%				
1100	For 1/4" plain cover plate, deduct						12%				
1500	For cover recessed for tile, 1/4" thick, deduct						12%				
1600	3/8" thick, add						5%				
1800	For checkered plate cover, 1/4" thick, deduct						12%				
1900	3/8" thick, add						2%				
2100	For slatted or round holes in cover, 1/4" thick, add						3%				
2200	3/8" thick, add						4%				
2300	For abrasive cover, add						12%				

05 55 Metal Stair Treads and Nosings

05 55 13 – Metal Stair Treads

05 55 13.50 Stair Treads

0010	STAIR TREADS , stringers and bolts not included										
3000	Diamond plate treads, steel, 1/8" thick										
3005	Open riser, black enamel										
3010	9" deep x 36" long		2 Sswk	48	.333	Ea.	91.50	17.05		108.55	130
3020	42" long			48	.333		96.50	17.05		113.55	136
3030	48" long			48	.333		101	17.05		118.05	141
3040	11" deep x 36" long			44	.364		96.50	18.60		115.10	139
3050	42" long			44	.364		102	18.60		120.60	145
3060	48" long			44	.364		108	18.60		126.60	152
3110	Galvanized, 9" deep x 36" long			48	.333		144	17.05		161.05	189
3120	42" long			48	.333		154	17.05		171.05	199
3130	48" long			48	.333		163	17.05		180.05	209
3140	11" deep x 36" long			44	.364		149	18.60		167.60	197
3150	42" long			44	.364		163	18.60		181.60	212
3160	48" long		▼	44	.364	▼	169	18.60		187.60	219
3200	Closed riser, black enamel										
3210	12" deep x 36" long		2 Sswk	40	.400	Ea.	110	20.50		130.50	157
3220	42" long			40	.400		119	20.50		139.50	167
3230	48" long			40	.400		126	20.50		146.50	174

05 55 Metal Stair Treads and Nosings

05 55 13 – Metal Stair Treads

05 55 13.50 Stair Treads

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor Equipment	Total	Total Incl O&P
3240	Galvanized, 12" deep x 36" long	G	2 Sswk	40	.400	Ea.	173	20.50	193.50	227
3250	42" long	G		40	.400		189	20.50	209.50	244
3260	48" long	G	▼	40	.400	▼	198	20.50	218.50	254
4000	Bar grating treads									
4005	Steel, 1-1/4" x 3/16" bars, anti-skid nosing, black enamel									
4010	8-5/8" deep x 30" long	G	2 Sswk	48	.333	Ea.	54	17.05	71.05	89.50
4020	36" long	G		48	.333		63.50	17.05	80.55	99.50
4030	48" long	G		48	.333		97.50	17.05	114.55	137
4040	10-15/16" deep x 36" long	G		44	.364		70	18.60	88.60	110
4050	48" long	G		44	.364		100	18.60	118.60	143
4060	Galvanized, 8-5/8" deep x 30" long	G		48	.333		62	17.05	79.05	98.50
4070	36" long	G		48	.333		73.50	17.05	90.55	111
4080	48" long	G		48	.333		108	17.05	125.05	149
4090	10-15/16" deep x 36" long	G		44	.364		86.50	18.60	105.10	128
4100	48" long	G	▼	44	.364	▼	112	18.60	130.60	156
4200	Aluminum, 1-1/4" x 3/16" bars, serrated, with nosing									
4210	7-5/8" deep x 18" long	G	2 Sswk	52	.308	Ea.	50	15.70	65.70	83
4220	24" long	G		52	.308		59	15.70	74.70	93
4230	30" long	G		52	.308		68.50	15.70	84.20	103
4240	36" long	G		52	.308		177	15.70	192.70	223
4250	8-13/16" deep x 18" long	G		48	.333		67	17.05	84.05	104
4260	24" long	G		48	.333		99.50	17.05	116.55	139
4270	30" long	G		48	.333		115	17.05	132.05	156
4280	36" long	G		48	.333		194	17.05	211.05	244
4290	10" deep x 18" long	G		44	.364		130	18.60	148.60	176
4300	30" long	G		44	.364		173	18.60	191.60	223
4310	36" long	G	▼	44	.364	▼	210	18.60	228.60	264
5000	Channel grating treads									
5005	Steel, 14 ga., 2-12" thick, galvanized									
5010	9" deep x 36" long	G	2 Sswk	48	.333	Ea.	103	17.05	120.05	143
5020	48" long	G	"	48	.333	"	139	17.05	156.05	182

05 55 19 – Metal Stair Tread Covers

05 55 19.50 Stair Tread Covers for Renovation

0010	STAIR TREAD COVERS FOR RENOVATION									
0205	Extruded tread cover with nosing, pre-drilled, includes screws									
0210	Aluminum with black abrasive strips, 9" wide x 3' long		1 Carp	24	.333	Ea.	106	15.30	121.30	140
0220	4' long			22	.364		140	16.65	156.65	179
0230	5' long			20	.400		174	18.35	192.35	220
0240	11" wide x 3' long			24	.333		136	15.30	151.30	174
0250	4' long			22	.364		175	16.65	191.65	219
0260	5' long		▼	20	.400	▼	225	18.35	243.35	277
0305	Black abrasive strips with yellow frant strips									
0310	Aluminum, 9" wide x 3' long		1 Carp	24	.333	Ea.	114	15.30	129.30	149
0320	4' long			22	.364		152	16.65	168.65	193
0330	5' long			20	.400		193	18.35	211.35	241
0340	11" wide x 3' long			24	.333		146	15.30	161.30	184
0350	4' long			22	.364		188	16.65	204.65	233
0360	5' long		▼	20	.400	▼	242	18.35	260.35	296
0405	Black abrasive strips with phataluminescent frant strips									
0410	Aluminum, 9" wide x 3' long		1 Carp	24	.333	Ea.	151	15.30	166.30	190
0420	4' long			22	.364		172	16.65	188.65	215
0430	5' long			20	.400		215	18.35	233.35	265

05 55 Metal Stair Treads and Nosings

05 55 19 – Metal Stair Tread Covers

05 55 19.50 Stair Tread Covers for Renovation		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bore Costs Labor	Equipment	Total	Total Incl O&P
0440	11" wide x 3' long	1 Corp	24	.333	Eo.	153	15.30		168.30	192
0450	4' long		22	.364		204	16.65		220.65	250
0460	5' long		20	.400		255	18.35		273.35	310

05 56 Metal Castings

05 56 13 – Metal Construction Castings

05 56 13.50 Construction Castings

0010	CONSTRUCTION CASTINGS									
0020	Monhole covers ond fromes, see Section 33 44 13.13									
0100	Column boses, cost iron, 16" x 16", approx. 65 lb.	G	E-4	46	.696	Eo.	153	36	3.09	192.09 235
0200	32" x 32", approx. 256 lb.	G	"	23	1.391		570	72	6.20	648.20 765
0400	Cost aluminum for wood columns, 8" x 8"	G	1 Corp	32	.250		45.50	11.45		56.95 67.50
0500	12" x 12"	G	"	32	.250		99	11.45		110.45 127
0600	Miscellaneous C.I. costings, light sections, less than 150 lb.	G	E-4	3200	.010	Lb.	2.38	.52	.04	2.94 3.58
1100	Heavy sections, more than 150 lb.	G		4200	.008		1.15	.39	.03	1.57 2
1300	Special low volume items	G		3200	.010		4.13	.52	.04	4.69 5.50
1500	For ductile iron, odd						100%			

05 58 Formed Metal Fabrications

05 58 13 – Column Covers

05 58 13.05 Column Covers

0010	COLUMN COVERS									
0015	Mode from recycled materials									
0020	Excludes structural steel, light go. metal framing, misc. metals, sealants									
0100	Round covers, 2 holes with 2 vertical joints for bocker rod ond sealont									
0110	Up to 12' high, no horizontal joints									
0120	12" diameter, 0.125" aluminum, onodized/pointed finish	G	2 Sswk	32	.500	V.L.F.	31.50	25.50		57 79.50
0130	Type 304 stainless steel, 16 gouge, #4 brushed finish	G		32	.500		47	25.50		72.50 96.50
0140	Type 316 stainless steel, 16 gouge, #4 brushed finish	G		32	.500		54	25.50		79.50 105
0150	18" diameter, aluminum	G		32	.500		47	25.50		72.50 96.50
0160	Type 304 stainless steel	G		32	.500		70.50	25.50		96 123
0170	Type 316 stainless steel	G		32	.500		81.50	25.50		107 135
0180	24" diameter, aluminum	G		32	.500		62.50	25.50		88 114
0190	Type 304 stainless steel	G		32	.500		94	25.50		119.50 148
0200	Type 316 stainless steel	G		32	.500		108	25.50		133.50 164
0210	30" diameter, aluminum	G		30	.533		78.50	27.50		106 134
0220	Type 304 stainless steel	G		30	.533		117	27.50		144.50 177
0230	Type 316 stainless steel	G		30	.533		135	27.50		162.50 197
0240	36" diameter, aluminum	G		30	.533		94	27.50		121.50 151
0250	Type 304 stainless steel	G		30	.533		141	27.50		168.50 203
0260	Type 316 stainless steel	G		30	.533		163	27.50		190.50 227
0400	Up to 24' high, 2 stocked sections with 1 horizontal joint									
0410	18" diameter, aluminum	G	2 Sswk	28	.571	V.L.F.	49.50	29		78.50 106
0450	Type 304 stainless steel	G		28	.571		74	29		103 133
0460	Type 316 stainless steel	G		28	.571		85.50	29		114.50 146
0470	24" diameter, aluminum	G		28	.571		66	29		95 124
0480	Type 304 stainless steel	G		28	.571		98.50	29		127.50 160
0490	Type 316 stainless steel	G		28	.571		114	29		143 177
0500	30" diameter, aluminum	G		24	.667		82	34		116 151

05 58 Formed Metal Fabrications

05 58 13 – Column Covers

05 58 13.05 Column Covers

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0510	Type 304 stainless steel	G	2 Sswk	24	.667	V.L.F.	123	34		157	195
0520	Type 316 stainless steel	G		24	.667		142	34		176	216
0530	36" diameter, aluminum	G		24	.667		98.50	34		132.50	169
0540	Type 304 stainless steel	G		24	.667		148	34		182	223
0550	Type 316 stainless steel	G		24	.667		171	34		205	248

05 58 21 – Formed Chain

05 58 21.05 Alloy Steel Chain

0010	ALLOY STEEL CHAIN , Grade 80, for lifting										
0015	Self-colored, cut lengths, 1/4"	G	E-17	4	4	C.L.F.	725	208		933	1,175
0020	3/8"	G		2	8		920	415		1,335	1,750
0030	1/2"	G		1.20	13.333		1,475	695		2,170	2,850
0040	5/8"	G		.72	22.222		2,375	1,150		3,525	4,675
0050	3/4"	G	E-18	.48	83.333		3,125	4,250	2,000	9,375	13,000
0060	7/8"	G		.40	100		5,525	5,100	2,400	13,025	17,500
0070	1"	G		.35	114		7,100	5,825	2,750	15,675	20,900
0080	1-1/4"	G		.24	166		13,400	8,500	4,000	25,900	33,700
0110	Haak, Grade 80, Clevis slip, 1/4"	G				Ea.	26			26	28.50
0120	3/8"	G					30.50			30.50	33.50
0130	1/2"	G					49			49	54
0140	5/8"	G					72			72	79.50
0150	3/4"	G					105			105	116
0160	Haak, Grade 80, eye/sling w/hammerlack coupling, 15 Tan	G					335			335	365
0170	22 Tan	G					905			905	995
0180	37 Tan	G					2,650			2,650	2,925

05 58 23 – Formed Metal Guards

05 58 23.90 Window Guards

0010	WINDOW GUARDS , shap fabricated										
0015	Expanded metal, steel angle frame, permanent	G	E-4	350	.091	S.F.	23	4.72	.41	28.13	34
0025	Steel bars, 1/2" x 1/2", spaced 5" O.C.	G	"	290	.110	"	15.90	5.70	.49	22.09	28
0030	Hinge mounted, add	G				Opng.	46			46	50.50
0040	Removable type, add	G				"	29			29	32
0050	For galvanized guards, add					S.F.	35%				
0070	For pivoted or projected type, add						105%	40%			
0100	Mild steel, stack units, economy	G	E-4	405	.079		6.25	4.08	.35	10.68	14.50
0200	Deluxe	G		405	.079		12.70	4.08	.35	17.13	21.50
0400	Woven wire, stack units, 3/8" channel frame, 3' x 5' opening	G		40	.800	Opng.	169	41.50	3.55	214.05	263
0500	4' x 6' opening	G		38	.842		270	43.50	3.74	317.24	380
0800	Basket guards for above, add	G					233			233	256
1000	Swinging guards for above, add	G					79.50			79.50	87.50

05 58 25 – Formed Lamp Posts

05 58 25.40 Lamp Posts

0010	LAMP POSTS										
0020	Aluminum, 7' high, stack units, post only	G	1 Corp	16	.500	Ea.	82	23		105	126
0100	Mild steel, plain	G	"	16	.500	"	71	23		94	114

05 71 Decorative Metal Stairs

05 71 13 – Fabricated Metal Spiral Stairs

05 71 13.50 Spiral Stairs		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SPIRAL STAIRS									
1805	Shop fabricated, custom ordered									
1810	Aluminum, 5'-0" diameter, plain units	G	E-4	45	.711	Riser	575	36.50	3.16	614.66 705
1820	Fancy units	G		45	.711		1,100	36.50	3.16	1,139.66 1,275
1900	Cast iron, 4'-0" diameter, plain units	G		45	.711		540	36.50	3.16	579.66 665
1920	Fancy Units	G		25	1.280		735	66	5.70	806.70 935
2000	Steel, industrial checkered plate, 4' diameter	G		45	.711		540	36.50	3.16	579.66 665
2200	6' diameter	G	▼	40	.800	▼	650	41.50	3.55	695.05 790
3100	Spiral stair kits, 12 stacking risers to fit exact floor height									
3110	Steel, flat metal treads, primed, 3'-6" diameter	G	2 Carp	1.60	10	Flight	1,275	460		1,735 2,100
3120	4'-0" diameter	G		1.45	11.034		1,450	505		1,955 2,375
3130	4'-6" diameter	G		1.35	11.852		1,600	545		2,145 2,625
3140	5'-0" diameter	G		1.25	12.800		1,750	585		2,335 2,825
3210	Galvanized, 3'-6" diameter	G		1.60	10		1,525	460		1,985 2,375
3220	4'-0" diameter	G		1.45	11.034		1,750	505		2,255 2,700
3230	4'-6" diameter	G		1.35	11.852		1,925	545		2,470 2,975
3240	5'-0" diameter	G		1.25	12.800		2,100	585		2,685 3,200
3310	Checkered plate tread, primed, 3'-6" diameter	G		1.45	11.034		1,500	505		2,005 2,425
3320	4'-0" diameter	G		1.35	11.852		1,700	545		2,245 2,725
3330	4'-6" diameter	G		1.25	12.800		1,850	585		2,435 2,950
3340	5'-0" diameter	G		1.15	13.913		2,025	640		2,665 3,200
3410	Galvanized, 3'-6" diameter	G		1.45	11.034		1,800	505		2,305 2,775
3420	4'-0" diameter	G		1.35	11.852		2,050	545		2,595 3,100
3430	4'-6" diameter	G		1.25	12.800		2,225	585		2,810 3,350
3440	5'-0" diameter	G		1.15	13.913		2,425	640		3,065 3,650
3510	Red oak covers on flat metal treads, 3'-6" diameter			1.35	11.852		2,600	545		3,145 3,725
3520	4'-0" diameter			1.25	12.800		2,875	585		3,460 4,075
3530	4'-6" diameter			1.15	13.913		3,100	640		3,740 4,375
3540	5'-0" diameter		▼	1.05	15.238	▼	3,375	700		4,075 4,800

05 73 Decorative Metal Railings

05 73 16 – Wire Rope Decorative Metal Railings

05 73 16.10 Cable Railings

0010	CABLE RAILINGS , with 316 stainless steel 1 x 19 cable, 3/16" diameter									
0015	Made from recycled materials									
0100	1-3/4" diameter stainless steel posts x 42" high, cables 4" OC	G	2 Sswk	25	.640	L.F.	34	32.50		66.50 95

05 73 23 – Ornamental Railings

05 73 23.50 Railings, Ornamental

0010	RAILINGS, ORNAMENTAL , 3'-6" high, posts @ 6' O.C.									
0020	Brass or stainless, hand forged, plain	G	2 Sswk	24	.667	L.F.	118	34		152 190
0100	Fancy	G		18	.889		195	45.50		240.50 295
0200	Aluminum, panelized, plain	G		24	.667		12.65	34		46.65 74
0300	Fancy	G		18	.889		28.50	45.50		74 111
0400	Wrought iron, hand forged, plain	G		24	.667		79	34		113 147
0500	Fancy	G		18	.889		139	45.50		184.50 233
0550	Steel, panelized, plain	G		24	.667		19.75	34		53.75 81.50
0560	Fancy	G		18	.889		28	45.50		73.50 111
0600	Composite metal/wood/glass, plain			18	.889		119	45.50		164.50 211
0700	Fancy			12	1.333		238	68		306 380

05 75 Decorative Formed Metal

05 75 13 – Columns

05 75 13.10 Aluminum Columns

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0010	ALUMINUM COLUMNS										
0015	Made from recycled materials										
0020	Aluminum, extruded, stock units, no cap or base, 6" diameter		E-4	240	.133	L.F.	10.85	6.90	.59	18.34	25
0100	8" diameter			170	.188		14.25	9.70	.84	24.79	33.50
0200	10" diameter			150	.213		19.20	11	.95	31.15	41.50
0300	12" diameter			140	.229		36	11.80	1.01	48.81	62
0400	15" diameter		▼	120	.267	▼	48	13.75	1.18	62.93	78.50
0410	Caps and bases, plain, 6" diameter					Set	22.50			22.50	25
0420	8" diameter						29.50			29.50	32.50
0430	10" diameter						41			41	45.50
0440	12" diameter						59.50			59.50	65
0450	15" diameter						110			110	121
0460	Caps, ornamental, plain						340			340	370
0470	Fancy					▼	1,675			1,675	1,850
0500	For square columns, add to column prices above					L.F.	50%				
0700	Residential, flat, 8' high, plain		E-4	20	1.600	Ea.	97.50	82.50	7.10	187.10	261
0720	Fancy			20	1.600		190	82.50	7.10	279.60	360
0740	Corner type, plain			20	1.600		168	82.50	7.10	257.60	340
0760	Fancy			20	1.600		330	82.50	7.10	419.60	520

05 75 13.20 Columns, Ornamental

0010	COLUMNS, ORNAMENTAL , shop fabricated	R051223-10									
6400	Mild steel, flat, 9" wide, stock units, painted, plain		E-4	160	.200	V.L.F.	9.15	10.30	.89	20.34	29
6450	Fancy			160	.200		17.75	10.30	.89	28.94	38.50
6500	Corner columns, painted, plain			160	.200		15.75	10.30	.89	26.94	36.50
6550	Fancy		▼	160	.200	▼	31	10.30	.89	42.19	53.50

Estimating Tips

06 05 00 Common Work Results for Wood, Plastics, and Composites

- Common to any wood-framed structure are the accessory connector items such as screws, nails, adhesives, hangers, connector plates, straps, angles, and hold-downs. For typical wood-framed buildings, such as residential projects, the aggregate total for these items can be significant, especially in areas where seismic loading is a concern. For floor and wall framing, the material cost is based on 10 to 25 lbs. per MBF. Hold-downs, hangers, and other connectors should be taken off by the piece.

Included with material costs are fasteners for a normal installation. RSMeans engineers use manufacturer's recommendations, written specifications, and/or standard construction practice for size and spacing of fasteners. Prices for various fasteners are shown for informational purposes only. Adjustments should be made if unusual fastening conditions exist.

06 10 00 Carpentry

- Lumber is a traded commodity and therefore sensitive to supply and demand in the

marketplace. Even in "budgetary" estimating of wood-framed projects, it is advisable to call local suppliers for the latest market pricing.

- Common quantity units for wood-framed projects are "thousand board feet" (MBF). A board foot is a volume of wood, 1" x 1' x 1', or 144 cubic inches. Board-foot quantities are generally calculated using nominal material dimensions—dressed sizes are ignored. Board foot per lineal foot of any stick of lumber can be calculated by dividing the nominal cross-sectional area by 12. As an example, 2,000 lineal feet of 2 x 12 equates to 4 MBF by dividing the nominal area, 2 x 12, by 12, which equals 2, and multiplying by 2,000 to give 4,000 board feet. This simple rule applies to all nominal dimensioned lumber.
- Waste is an issue of concern at the quantity takeoff for any area of construction. Framing lumber is sold in even foot lengths, i.e., 10', 12', 14', 16', and depending on spans, wall heights, and the grade of lumber, waste is inevitable. A rule of thumb for lumber waste is 5%–10% depending on material quality and the complexity of the framing.
- Wood in various forms and shapes is used in many projects, even where the main structural framing is steel, concrete, or masonry. Plywood

as a back-up partition material and 2x boards used as blocking and cant strips around roof edges are two common examples. The estimator should ensure that the costs of all wood materials are included in the final estimate.

06 20 00 Finish Carpentry

- It is necessary to consider the grade of workmanship when estimating labor costs for erecting millwork and interior finish. In practice, there are three grades: premium, custom, and economy. The RSMeans daily output for base and case moldings is in the range of 200 to 250 L.F. per carpenter per day. This is appropriate for most average custom-grade projects. For premium projects, an adjustment to productivity of 25%–50% should be made, depending on the complexity of the job.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 05 – Selective Wood and Plastics Demolition

06 05 05.10 Selective Demolition Wood Framing				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P	
0010	SELECTIVE DEMOLITION WOOD FRAMING			R024119-10									
0100	Timber connector, nailed, small			1 Clab	96	.083	Ea.			3.05		3.05	4.71
0110	Medium				60	.133				4.89		4.89	7.55
0120	Large				48	.167				6.10		6.10	9.45
0130	Balted, small				48	.167				6.10		6.10	9.45
0140	Medium				32	.250				9.15		9.15	14.15
0150	Large			▼	24	.333	▼			12.20		12.20	18.85
2958	Beams, 2" x 6"			2 Clab	1100	.015	L.F.			.53		.53	.82
2960	2" x 8"				825	.019				.71		.71	1.10
2965	2" x 10"				665	.024				.88		.88	1.36
2970	2" x 12"				550	.029				1.07		1.07	1.65
2972	2" x 14"				470	.034				1.25		1.25	1.93
2975	4" x 8"			B-1	413	.058				2.17		2.17	3.35
2980	4" x 10"				330	.073				2.71		2.71	4.19
2985	4" x 12"				275	.087				3.26		3.26	5.05
3000	6" x 8"				275	.087				3.26		3.26	5.05
3040	6" x 10"				220	.109				4.07		4.07	6.30
3080	6" x 12"				185	.130				4.84		4.84	7.45
3120	8" x 12"				140	.171				6.40		6.40	9.85
3160	10" x 12"				110	.218				8.15		8.15	12.55
3162	Alternate pricing method			▼	1.10	21.818	M.B.F.			815		815	1,250
3170	Blacking, in 16" OC wall framing, 2" x 4"			1 Clab	600	.013	L.F.			.49		.49	.75
3172	2" x 6"				400	.020				.73		.73	1.13
3174	In 24" OC wall framing, 2" x 4"				600	.013				.49		.49	.75
3176	2" x 6"				400	.020				.73		.73	1.13
3178	Alt method, wood blacking removal from wood framing				.40	20	M.B.F.			735		735	1,125
3179	Wood blacking removal from steel framing				.36	22.222	"			815		815	1,250
3180	Bracing, let in, 1" x 3", studs 16" OC				1050	.008	L.F.			.28		.28	.43
3181	Studs 24" OC				1080	.007				.27		.27	.42
3182	1" x 4", studs 16" OC				1050	.008				.28		.28	.43
3183	Studs 24" OC				1080	.007				.27		.27	.42
3184	1" x 6", studs 16" OC				1050	.008				.28		.28	.43
3185	Studs 24" OC				1080	.007				.27		.27	.42
3186	2" x 3", studs 16" OC				800	.010				.37		.37	.57
3187	Studs 24" OC				830	.010				.35		.35	.55
3188	2" x 4", studs 16" OC				800	.010				.37		.37	.57
3189	Studs 24" OC				830	.010				.35		.35	.55
3190	2" x 6", studs 16" OC				800	.010				.37		.37	.57
3191	Studs 24" OC				830	.010				.35		.35	.55
3192	2" x 8", studs 16" OC				800	.010				.37		.37	.57
3193	Studs 24" OC				830	.010				.35		.35	.55
3194	"T" shaped metal bracing, studs at 16" OC				1060	.008				.28		.28	.43
3195	Studs at 24" OC				1200	.007				.24		.24	.38
3196	Metal straps, studs at 16" OC				1200	.007				.24		.24	.38
3197	Studs at 24" OC				1240	.006	▼			.24		.24	.36
3200	Columns, round, 8' to 14' tall			▼	40	.200	Ea.			7.35		7.35	11.30
3202	Dimensional lumber sizes			2 Clab	1.10	14.545	M.B.F.			535		535	825
3250	Blacking, between jaists			1 Clab	320	.025	Ea.			.92		.92	1.41
3252	Bridging, metal strap, between joists				320	.025	Pr.			.92		.92	1.41
3254	Wood, between jaists				320	.025	"			.92		.92	1.41
3260	Door buck, studs, header & access., 8' high 2" x 4" wall, 3' wide				32	.250	Ea.			9.15		9.15	14.15
3261	4' wide				32	.250				9.15		9.15	14.15
3262	5' wide				32	.250				9.15		9.15	14.15

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 05 – Selective Wood and Plastics Demolition

06 05 05.10 Selective Demolition Wood Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3263	6' wide	1 Clab	32	.250	Ea.		9.15		9.15	14.15
3264	8' wide		30	.267			9.75		9.75	15.10
3265	10' wide		30	.267			9.75		9.75	15.10
3266	12' wide		30	.267			9.75		9.75	15.10
3267	2" x 6" wall, 3' wide		32	.250			9.15		9.15	14.15
3268	4' wide		32	.250			9.15		9.15	14.15
3269	5' wide		32	.250			9.15		9.15	14.15
3270	6' wide		32	.250			9.15		9.15	14.15
3271	8' wide		30	.267			9.75		9.75	15.10
3272	10' wide		30	.267			9.75		9.75	15.10
3273	12' wide		30	.267			9.75		9.75	15.10
3274	Window buck, studs, header & access, 8' high 2" x 4" wall, 2' wide		24	.333			12.20		12.20	18.85
3275	3' wide		24	.333			12.20		12.20	18.85
3276	4' wide		24	.333			12.20		12.20	18.85
3277	5' wide		24	.333			12.20		12.20	18.85
3278	6' wide		24	.333			12.20		12.20	18.85
3279	7' wide		24	.333			12.20		12.20	18.85
3280	8' wide		22	.364			13.35		13.35	20.50
3281	10' wide		22	.364			13.35		13.35	20.50
3282	12' wide		22	.364			13.35		13.35	20.50
3283	2" x 6" wall, 2' wide		24	.333			12.20		12.20	18.85
3284	3' wide		24	.333			12.20		12.20	18.85
3285	4' wide		24	.333			12.20		12.20	18.85
3286	5' wide		24	.333			12.20		12.20	18.85
3287	6' wide		24	.333			12.20		12.20	18.85
3288	7' wide		24	.333			12.20		12.20	18.85
3289	8' wide		22	.364			13.35		13.35	20.50
3290	10' wide		22	.364			13.35		13.35	20.50
3291	12' wide		22	.364			13.35		13.35	20.50
3360	Deck or porch decking		825	.010	L.F.		.36		.36	.55
3400	Fascio boards, 1" x 6"		500	.016			.59		.59	.90
3440	1" x 8"		450	.018			.65		.65	1.01
3480	1" x 10"		400	.020			.73		.73	1.13
3490	2" x 6"		450	.018			.65		.65	1.01
3500	2" x 8"		400	.020			.73		.73	1.13
3510	2" x 10"		350	.023			.84		.84	1.29
3610	Furring, on wood walls or ceiling		4000	.002	S.F.		.07		.07	.11
3620	On masonry or concrete walls or ceiling		1200	.007	"		.24		.24	.38
3800	Headers over openings, 2 @ 2" x 6"		110	.073	L.F.		2.67		2.67	4.11
3840	2 @ 2" x 8"		100	.080			2.93		2.93	4.52
3880	2 @ 2" x 10"		90	.089			3.26		3.26	5.05
3885	Alternate pricing method		.26	30.651	M.B.F.		1,125		1,125	1,725
3920	Joists, 1" x 4"		1250	.006	L.F.		.23		.23	.36
3930	1" x 6"		1135	.007			.26		.26	.40
3940	1" x 8"		1000	.008			.29		.29	.45
3950	1" x 10"		895	.009			.33		.33	.51
3960	1" x 12"		765	.010			.38		.38	.59
4200	2" x 4"	2 Clab	1000	.016			.59		.59	.90
4230	2" x 6"		970	.016			.60		.60	.93
4240	2" x 8"		940	.017			.62		.62	.96
4250	2" x 10"		910	.018			.64		.64	.99
4280	2" x 12"		880	.018			.67		.67	1.03
4281	2" x 14"		850	.019			.69		.69	1.06

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 05 – Selective Wood and Plastics Demolition

06 05 05.10 Selective Demolition Wood Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4282	Composite joists, 9-1/2"	2 Clob	960	.017	L.F.		.61		.61	.94
4283	11-7/8"		930	.017			.63		.63	.97
4284	14"		897	.018			.65		.65	1.01
4285	16"		865	.019			.68		.68	1.05
4290	Wood joists, alternote pricing method		1.50	10.667	M.B.F.		390		390	605
4500	Open web joist, 12" deep		500	.032	L.F.		1.17		1.17	1.81
4505	14" deep		475	.034			1.23		1.23	1.90
4510	16" deep		450	.036			1.30		1.30	2.01
4520	18" deep		425	.038			1.38		1.38	2.13
4530	24" deep		400	.040			1.47		1.47	2.26
4550	Ledger strips, 1" x 2"	1 Clob	1200	.007			.24		.24	.38
4560	1" x 3"		1200	.007			.24		.24	.38
4570	1" x 4"		1200	.007			.24		.24	.38
4580	2" x 2"		1100	.007			.27		.27	.41
4590	2" x 4"		1000	.008			.29		.29	.45
4600	2" x 6"		1000	.008			.29		.29	.45
4601	2" x 8 or 2" x 10"		800	.010			.37		.37	.57
4602	4" x 6"		600	.013			.49		.49	.75
4604	4" x 8"		450	.018			.65		.65	1.01
5400	Posts, 4" x 4"	2 Clob	800	.020			.73		.73	1.13
5405	4" x 6"		550	.029			1.07		1.07	1.65
5410	4" x 8"		440	.036			1.33		1.33	2.06
5425	4" x 10"		390	.041			1.50		1.50	2.32
5430	4" x 12"		350	.046			1.68		1.68	2.58
5440	6" x 6"		400	.040			1.47		1.47	2.26
5445	6" x 8"		350	.046			1.68		1.68	2.58
5450	6" x 10"		320	.050			1.83		1.83	2.83
5455	6" x 12"		290	.055			2.02		2.02	3.12
5480	8" x 8"		300	.053			1.95		1.95	3.02
5500	10" x 10"		240	.067			2.44		2.44	3.77
5660	Tongue and groove floor planks		2	8	M.B.F.		293		293	450
5682	Roofers, ordinary, 16" OC, 2" x 4"		880	.018	S.F.		.67		.67	1.03
5683	2" x 6"		840	.019			.70		.70	1.08
5684	2" x 8"		820	.020			.72		.72	1.10
5685	2" x 10"		820	.020			.72		.72	1.10
5686	2" x 12"		810	.020			.72		.72	1.12
5687	24" OC, 2" x 4"		1170	.014			.50		.50	.77
5688	2" x 6"		1117	.014			.52		.52	.81
5689	2" x 8"		1091	.015			.54		.54	.83
5690	2" x 10"		1091	.015			.54		.54	.83
5691	2" x 12"		1077	.015			.54		.54	.84
5795	Roofers, ordinary, 2" x 4" (alternote method)		862	.019	L.F.		.68		.68	1.05
5800	2" x 6" (alternote method)		850	.019			.69		.69	1.06
5840	2" x 8" (alternote method)		837	.019			.70		.70	1.08
5855	2" x 10" (alternote method)		825	.019			.71		.71	1.10
5865	2" x 12" (alternote method)		812	.020			.72		.72	1.11
5870	Sill plate, 2" x 4"	1 Clob	1170	.007			.25		.25	.39
5871	2" x 6"		780	.010			.38		.38	.58
5872	2" x 8"		586	.014			.50		.50	.77
5873	Alternote pricing method		.78	10.256	M.B.F.		375		375	580
5885	Ridge board, 1" x 4"	2 Clob	900	.018	L.F.		.65		.65	1.01
5886	1" x 6"		875	.018			.67		.67	1.03
5887	1" x 8"		850	.019			.69		.69	1.06

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 05 – Selective Wood and Plastics Demolition

06 05 05.10 Selective Demolition Wood Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5888	1" x 10"	2 Clob	825	.019	L.F.		.71		.71	1.10
5889	1" x 12"		800	.020			.73		.73	1.13
5890	2" x 4"		900	.018			.65		.65	1.01
5892	2" x 6"		875	.018			.67		.67	1.03
5894	2" x 8"		850	.019			.69		.69	1.06
5896	2" x 10"		825	.019			.71		.71	1.10
5898	2" x 12"		800	.020			.73		.73	1.13
6050	Rafter tie, 1" x 4"		1250	.013			.47		.47	.72
6052	1" x 6"		1135	.014			.52		.52	.80
6054	2" x 4"		1000	.016			.59		.59	.90
6056	2" x 6"		970	.016			.60		.60	.93
6070	Sleepers, on concrete, 1" x 2"	1 Clob	4700	.002			.06		.06	.10
6075	1" x 3"		4000	.002			.07		.07	.11
6080	2" x 4"		3000	.003			.10		.10	.15
6085	2" x 6"	▼	2600	.003	▼		.11		.11	.17
6086	Sheathing from roof, 5/16"	2 Clob	1600	.010	S.F.		.37		.37	.57
6088	3/8"		1525	.010			.38		.38	.59
6090	1/2"		1400	.011			.42		.42	.65
6092	5/8"		1300	.012			.45		.45	.70
6094	3/4"		1200	.013			.49		.49	.75
6096	Board sheathing from roof		1400	.011			.42		.42	.65
6100	Sheathing, from walls, 1/4"		1200	.013			.49		.49	.75
6110	5/16"		1175	.014			.50		.50	.77
6120	3/8"		1150	.014			.51		.51	.79
6130	1/2"		1125	.014			.52		.52	.80
6140	5/8"		1100	.015			.53		.53	.82
6150	3/4"		1075	.015			.55		.55	.84
6152	Board sheathing from walls		1500	.011			.39		.39	.60
6158	Subfloor, with boards		1050	.015			.56		.56	.86
6160	Plywood, 1/2" thick		768	.021			.76		.76	1.18
6162	5/8" thick		760	.021			.77		.77	1.19
6164	3/4" thick		750	.021			.78		.78	1.21
6165	1-1/8" thick	▼	720	.022			.81		.81	1.26
6166	Underlayment, particle board, 3/8" thick	1 Clob	780	.010			.38		.38	.58
6168	1/2" thick		768	.010			.38		.38	.59
6170	5/8" thick		760	.011			.39		.39	.60
6172	3/4" thick	▼	750	.011	▼		.39		.39	.60
6200	Stairs and stringers, minimum	2 Clob	40	.400	Riser		14.65		14.65	22.50
6240	Maximum	"	26	.615	"		22.50		22.50	35
6300	Components, tread	1 Clob	110	.073	Eo.		2.67		2.67	4.11
6320	Riser		80	.100	"		3.67		3.67	5.65
6390	Stringer, 2" x 10"		260	.031	L.F.		1.13		1.13	1.74
6400	2" x 12"		260	.031			1.13		1.13	1.74
6410	3" x 10"		250	.032			1.17		1.17	1.81
6420	3" x 12"		250	.032			1.17		1.17	1.81
6590	Wood studs, 2" x 3"	2 Clob	3076	.005			.19		.19	.29
6600	2" x 4"		2000	.008			.29		.29	.45
6640	2" x 6"	▼	1600	.010	▼		.37		.37	.57
6720	Wall framing, including studs, plates and blocking, 2" x 4"	1 Clob	600	.013	S.F.		.49		.49	.75
6740	2" x 6"		480	.017	"		.61		.61	.94
6750	Headers, 2" x 4"		1125	.007	L.F.		.26		.26	.40
6755	2" x 6"		1125	.007			.26		.26	.40
6760	2" x 8"		1050	.008			.28		.28	.43

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 05 – Selective Wood and Plastics Demolition

06 05 05.10 Selective Demolition Wood Framing				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
6765	2" x 10"			1 Clab	1050	.008	L.F.		.28		.28	.43
6770	2" x 12"				1000	.008			.29		.29	.45
6780	4" x 10"				525	.015			.56		.56	.86
6785	4" x 12"				500	.016			.59		.59	.90
6790	6" x 8"				560	.014			.52		.52	.81
6795	6" x 10"				525	.015			.56		.56	.86
6797	6" x 12"				500	.016			.59		.59	.90
7000	Trusses											
7050	12' span			2 Clab	74	.216	Ea.		7.90		7.90	12.25
7150	24' span			F-3	66	.606			28.50	10.05	38.55	54.50
7200	26' span				64	.625			29	10.35	39.35	56.50
7250	28' span				62	.645			30	10.70	40.70	58.50
7300	30' span				58	.690			32	11.45	43.45	62
7350	32' span				56	.714			33.50	11.85	45.35	64.50
7400	34' span				54	.741			34.50	12.30	46.80	66.50
7450	36' span				52	.769			36	12.75	48.75	69.50
8000	Saffit, T & G wood			1 Clab	520	.015	S.F.		.56		.56	.87
8010	Hardboard, vinyl or aluminum			"	640	.013			.46		.46	.71
8030	Plywood			2 Carp	315	.051	▼		2.33		2.33	3.59
9500	See Section 02 41 19.19 for rubbish handling											

06 05 05.20 Selective Demolition Millwork and Trim

0010	SELECTIVE DEMOLITION MILLWORK AND TRIM		R024119-10									
1000	Cabinets, wood, base cabinets, per L.F.			2 Clab	80	.200	L.F.		7.35		7.35	11.30
1020	Wall cabinets, per L.F.			"	80	.200	"		7.35		7.35	11.30
1060	Remove and reset, base cabinets			2 Carp	18	.889	Ea.		41		41	63
1070	Wall cabinets			"	20	.800	"		36.50		36.50	56.50
1100	Steel, painted, base cabinets			2 Clab	60	.267	L.F.		9.75		9.75	15.10
1120	Wall cabinets				60	.267	"		9.75		9.75	15.10
1200	Casework, large area				320	.050	S.F.		1.83		1.83	2.83
1220	Selective				200	.080	"		2.93		2.93	4.52
1500	Counter top, minimum				200	.080	L.F.		2.93		2.93	4.52
1510	Maximum				120	.133			4.89		4.89	7.55
1550	Remove and reset, minimum			2 Carp	50	.320			14.65		14.65	22.50
1560	Maximum			"	40	.400	▼		18.35		18.35	28.50
2000	Paneling, 4' x 8' sheets			2 Clab	2000	.008	S.F.		.29		.29	.45
2100	Boards, 1" x 4"				700	.023			.84		.84	1.29
2120	1" x 6"				750	.021			.78		.78	1.21
2140	1" x 8"				800	.020			.73		.73	1.13
3000	Trim, baseboard, to 6" wide				1200	.013	L.F.		.49		.49	.75
3040	Greater than 6" and up to 12" wide				1000	.016			.59		.59	.90
3080	Remove and reset, minimum			2 Carp	400	.040			1.83		1.83	2.83
3090	Maximum			"	300	.053			2.45		2.45	3.77
3100	Ceiling trim			2 Clab	1000	.016			.59		.59	.90
3120	Chair rail				1200	.013			.49		.49	.75
3140	Railings with balusters				240	.067	▼		2.44		2.44	3.77
3160	Wainscoting				700	.023	S.F.		.84		.84	1.29

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.10 Nails

0010	NAILS, material only, based upon 50# box purchase											
0020	Copper nails, plain						Lb.	9.65			9.65	10.60
0400	Stainless steel, plain							9.25			9.25	10.15
0500	Box, 3d to 20d, bright							1.28			1.28	1.41

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.10 Nails		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Labor	Costs Equipment	Total	Total Incl O&P
0520	Galvanized				Lb.	1.76			1.76	1.94
0600	Common, 3d to 60d, plain					1.10			1.10	1.21
0700	Galvanized					1.97			1.97	2.17
0800	Aluminum					5.85			5.85	6.45
1000	Annular or spiral thread, 4d to 60d, plain					2.56			2.56	2.82
1200	Galvanized					3.03			3.03	3.33
1400	Drywall nails, plain					1.37			1.37	1.51
1600	Galvanized					2			2	2.20
1800	Finish nails, 4d to 10d, plain					1.25			1.25	1.38
2000	Galvanized					1.86			1.86	2.05
2100	Aluminum					5.85			5.85	6.45
2300	Flooring nails, hardened steel, 2d to 10d, plain					2.63			2.63	2.89
2400	Galvanized					4.04			4.04	4.44
2500	Gypsum lath nails, 1-1/8", 13 ga. flathead, blued					2			2	2.20
2600	Masonry nails, hardened steel, 3/4" to 3" long, plain					1.71			1.71	1.88
2700	Galvanized					3.79			3.79	4.17
2900	Roofing nails, threaded, galvanized					1.76			1.76	1.94
3100	Aluminum					4.85			4.85	5.35
3300	Compressed lead head, threaded, galvanized					2.49			2.49	2.74
3600	Siding nails, plain shank, galvanized					2.02			2.02	2.22
3800	Aluminum					5.85			5.85	6.45
5000	Add to prices above for cement coating					.11			.11	.12
5200	Zinc or tin plating					.14			.14	.15
5500	Vinyl coated sinkers, 8d to 16d					2.50			2.50	2.75

06 05 23.40 Sheet Metal Screws

0010	SHEET METAL SCREWS									
0020	Steel, standard, #8 x 3/4", plain				C	3.20			3.20	3.52
0100	Galvanized					3.20			3.20	3.52
0300	#10 x 1", plain					4.40			4.40	4.84
0400	Galvanized					4.40			4.40	4.84
0600	With washers, #14 x 1", plain					9.65			9.65	10.60
0700	Galvanized					9.65			9.65	10.60
0900	#14 x 2", plain					15			15	16.50
1000	Galvanized					15			15	16.50
1500	Self-drilling, with washers, (pinch point) #8 x 3/4", plain					7.30			7.30	8
1600	Galvanized					7.30			7.30	8
1800	#10 x 3/4", plain					7.80			7.80	8.55
1900	Galvanized					7.80			7.80	8.55
3000	Stainless steel w/aluminum or neoprene washers, #14 x 1", plain					8.10			8.10	8.95
3100	#14 x 2", plain					10			10	11

06 05 23.50 Wood Screws

0010	WOOD SCREWS									
0020	#8 x 1" long, steel				C	2.70			2.70	2.97
0100	Brass					12.20			12.20	13.40
0200	#8, 2" long, steel					4.16			4.16	4.58
0300	Brass					22			22	24
0400	#10, 1" long, steel					3.30			3.30	3.63
0500	Brass					15.60			15.60	17.15
0600	#10, 2" long, steel					5.30			5.30	5.85
0700	Brass					27			27	29.50
0800	#10, 3" long, steel					8.85			8.85	9.75
1000	#12, 2" long, steel					7.30			7.30	8.05

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

		Daily	Labor-			2014 Bare Costs			Total
		Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
06 05 23.50 Wood Screws									
1100	Brass				C	34.50			38
1500	#12, 3" long, steel					11.15			12.30
2000	#12, 4" long, steel					18.75			20.50
06 05 23.60 Timber Connectors									
0010	TIMBER CONNECTORS								
0020	Add up cost of each part for total cost of connection								
0100	Connector plates, steel, with bolts, straight	2 Corp	75	.213	Ea.	30.50	9.80		48.50
0110	Tee, 7 ga.		50	.320		35	14.65		61
0120	T-Strap, 14 ga., 12" x 8" x 2"		50	.320		35	14.65		61
0150	Anchor plates, 7 ga., 9" x 7"		75	.213		30.50	9.80		48.50
0200	Bolts, machine, sq. hd. with nut & washer, 1/2" diameter, 4" long	1 Corp	140	.057		.75	2.62		4.87
0300	7-1/2" long		130	.062		1.37	2.82		5.85
0500	3/4" diameter, 7-1/2" long		130	.062		3.20	2.82		7.85
0610	Machine bolts, w/nut, washer, 3/4" diam., 15" L, HD's & beam hangers		95	.084		5.95	3.86		12.50
0800	Drilling bolt holes in timber, 1/2" diameter		450	.018	Inch		.82		1.26
0900	1" diameter		350	.023	"		1.05		1.62
1100	Framing anchor, angle, 3" x 3" x 1-1/2", 12 ga		175	.046	Ea.	2.61	2.10		6.10
1150	Framing anchors, 18 ga., 4-1/2" x 2-3/4"		175	.046		2.61	2.10		6.10
1160	Framing anchors, 18 ga., 4-1/2" x 3"		175	.046		2.61	2.10		6.10
1170	Clip anchors plates, 18 ga., 12" x 1-1/8"		175	.046		2.61	2.10		6.10
1250	Holdowns, 3 ga. base, 10 ga. body		8	1		25	46		98.50
1260	Holdowns, 7 ga. 11-1/16" x 3-1/4"		8	1		25	46		98.50
1270	Holdowns, 7 ga. 14-3/8" x 3-1/8"		8	1		25	46		98.50
1275	Holdowns, 12 ga. 8" x 2-1/2"		8	1		25	46		98.50
1300	Joist and beam hangers, 18 ga. galv., for 2" x 4" joist		175	.046		.73	2.10		4.03
1400	2" x 6" to 2" x 10" joist		165	.048		1.39	2.22		4.96
1600	16 ga. galv., 3" x 6" to 3" x 10" joist		160	.050		2.96	2.29		6.80
1700	3" x 10" to 3" x 14" joist		160	.050		4.92	2.29		8.95
1800	4" x 6" to 4" x 10" joist		155	.052		3.07	2.37		7.05
1900	4" x 10" to 4" x 14" joist		155	.052		5	2.37		9.15
2000	Two-2" x 6" to two-2" x 10" joists		150	.053		4.19	2.45		8.40
2100	Two-2" x 10" to two-2" x 14" joists		150	.053		4.68	2.45		8.90
2300	3/16" thick, 6" x 8" joist		145	.055		65	2.53		75.50
2400	6" x 10" joist		140	.057		67.50	2.62		78.50
2500	6" x 12" joist		135	.059		70.50	2.72		81.50
2700	1/4" thick, 6" x 14" joist		130	.062		73	2.82		85
2900	Plywood clips, extruded aluminum H clip, for 3/4" panels					.24			.26
3000	Galvanized 18 ga. back-up clip					.18			.20
3200	Past framing, 16 ga. galv. for 4" x 4" base, 2 piece	1 Corp	130	.062		16.40	2.82		22.50
3300	Cap		130	.062		23	2.82		29.50
3500	Rafter anchors, 18 ga. galv., 1-1/2" wide, 5-1/4" long		145	.055		.49	2.53		4.44
3600	10-3/4" long		145	.055		1.46	2.53		5.50
3800	Shear plates, 2-5/8" diameter		120	.067		2.38	3.06		7.35
3900	4" diameter		115	.070		5.65	3.19		11.10
4000	Sill anchors, embedded in concrete or block, 25-1/2" long		115	.070		12.70	3.19		18.85
4100	Spike grids, 3" x 6"		120	.067		.96	3.06		5.80
4400	Split rings, 2-1/2" diameter		120	.067		1.96	3.06		6.90
4500	4" diameter		110	.073		2.97	3.33		8.40
4550	Tie plate, 20 ga., 7" x 3 1/8"		110	.073		2.97	3.33		8.40
4560	Tie plate, 20 ga., 5" x 4 1/8"		110	.073		2.97	3.33		8.40
4575	Twist straps, 18 ga., 12" x 1 1/4"		110	.073		2.97	3.33		8.40
4580	Twist straps, 18 ga., 16" x 1 1/4"		110	.073		2.97	3.33		8.40

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4600	Strap ties, 20 ga., 2-1/16" wide, 12 13/16" long	1 Carp	180	.044	Ea.	.94	2.04		2.98	4.17
4700	Strap ties, 16 ga., 1-3/8" wide, 12" long		180	.044		.94	2.04		2.98	4.17
4800	21-5/8" x 1-1/4"		160	.050		2.96	2.29		5.25	6.80
5000	Toothed rings, 2-5/8" or 4" diameter		90	.089		1.78	4.08		5.86	8.25
5200	Truss plates, nailed, 20 ga., up to 32' span	▼	17	.471	Truss	12.90	21.50		34.40	47.50
5400	Washers, 2" x 2" x 1/8"				Ea.	.40			.40	.44
5500	3" x 3" x 3/16"				"	1.06			1.06	1.17
6000	Angles and gussets, painted									
6012	7 ga., 3-1/4" x 3-1/4" x 2-1/2" long	1 Carp	1.90	4.211	C	1,100	193		1,293	1,525
6014	3-1/4" x 3-1/4" x 5" long		1.90	4.211		2,150	193		2,343	2,675
6016	3-1/4" x 3-1/4" x 7-1/2" long		1.85	4.324		4,075	198		4,273	4,775
6018	5-3/4" x 5-3/4" x 2-1/2" long		1.85	4.324		2,625	198		2,823	3,200
6020	5-3/4" x 5-3/4" x 5" long		1.85	4.324		4,175	198		4,373	4,900
6022	5-3/4" x 5-3/4" x 7-1/2" long		1.80	4.444		6,175	204		6,379	7,125
6024	3 ga., 4-1/4" x 4-1/4" x 3" long		1.85	4.324		2,800	198		2,998	3,375
6026	4-1/4" x 4-1/4" x 6" long		1.85	4.324		6,000	198		6,198	6,900
6028	4-1/4" x 4-1/4" x 9" long		1.80	4.444		6,750	204		6,954	7,750
6030	7-1/4" x 7-1/4" x 3" long		1.80	4.444		4,825	204		5,029	5,650
6032	7-1/4" x 7-1/4" x 6" long		1.80	4.444		6,525	204		6,729	7,500
6034	7-1/4" x 7-1/4" x 9" long	▼	1.75	4.571	▼	14,600	210		14,810	16,400
6036	Gussets									
6038	7 ga., 8-1/8" x 8-1/8" x 2-3/4" long	1 Carp	1.80	4.444	C	4,625	204		4,829	5,400
6040	3 ga., 9-3/4" x 9-3/4" x 3-1/4" long	"	1.80	4.444	"	6,400	204		6,604	7,375
6101	Beam hangers, polymer painted									
6102	Bolted, 3 ga., (W x H x L)									
6104	3-1/4" x 9" x 12" top flange	1 Carp	1	8	C	19,600	365		19,965	22,200
6106	5-1/4" x 9" x 12" top flange		1	8		20,500	365		20,865	23,100
6108	5-1/4" x 11" x 11-3/4" top flange		1	8		23,200	365		23,565	26,200
6110	6-7/8" x 9" x 12" top flange		1	8		21,200	365		21,565	23,900
6112	6-7/8" x 11" x 13-1/2" top flange		1	8		24,400	365		24,765	27,500
6114	8-7/8" x 11" x 15-1/2" top flange	▼	1	8	▼	26,100	365		26,465	29,300
6116	Nailed, 3 ga., (W x H x L)									
6118	3-1/4" x 10-1/2" x 10" top flange	1 Carp	1.80	4.444	C	20,500	204		20,704	22,800
6120	3-1/4" x 10-1/2" x 12" top flange		1.80	4.444		20,500	204		20,704	22,800
6122	5-1/4" x 9-1/2" x 10" top flange		1.80	4.444		20,900	204		21,104	23,300
6124	5-1/4" x 9-1/2" x 12" top flange		1.80	4.444		20,900	204		21,104	23,300
6128	6-7/8" x 8-1/2" x 12" top flange	▼	1.80	4.444	▼	21,400	204		21,604	23,800
6134	Saddle hangers, glu-lam (W x H x L)									
6136	3-1/4" x 10-1/2" x 5-1/4" x 6" saddle	1 Carp	.50	16	C	15,300	735		16,035	17,900
6138	3-1/4" x 10-1/2" x 6-7/8" x 6" saddle		.50	16		16,100	735		16,835	18,800
6140	3-1/4" x 10-1/2" x 8-7/8" x 6" saddle		.50	16		16,900	735		17,635	19,700
6142	3-1/4" x 19-1/2" x 5-1/4" x 10-1/8" saddle		.40	20		15,300	915		16,215	18,200
6144	3-1/4" x 19-1/2" x 6-7/8" x 10-1/8" saddle		.40	20		16,100	915		17,015	19,100
6146	3-1/4" x 19-1/2" x 8-7/8" x 10-1/8" saddle		.40	20		16,900	915		17,815	20,000
6148	5-1/4" x 9-1/2" x 5-1/4" x 12" saddle		.50	16		18,300	735		19,035	21,200
6150	5-1/4" x 9-1/2" x 6-7/8" x 9" saddle		.50	16		20,000	735		20,735	23,100
6152	5-1/4" x 10-1/2" x spec x 12" saddle		.50	16		21,800	735		22,535	25,000
6154	5-1/4" x 18" x 5-1/4" x 12-1/8" saddle		.40	20		18,300	915		19,215	21,500
6156	5-1/4" x 18" x 6-7/8" x 12-1/8" saddle		.40	20		20,000	915		20,915	23,400
6158	5-1/4" x 18" x spec x 12-1/8" saddle		.40	20		21,800	915		22,715	25,300
6160	6-7/8" x 8-1/2" x 6-7/8" x 12" saddle		.50	16		21,800	735		22,535	25,100
6162	6-7/8" x 8-1/2" x 8-7/8" x 12" saddle		.50	16		22,600	735		23,335	25,900
6164	6-7/8" x 10-1/2" x spec x 12" saddle	▼	.50	16	▼	21,800	735		22,535	25,100

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6166	6-7/8" x 18" x 18" x 6-7/8" x 13-3/4" saddle	1 Carp	.40	20	C	21,800	915		22,715	25,400
6168	6-7/8" x 18" x 18" x 8-7/8" x 13-3/4" saddle		.40	20		22,600	915		23,515	26,200
6170	6-7/8" x 18" x spec x 13-3/4" saddle		.40	20		24,400	915		25,315	28,200
6172	8-7/8" x 18" x spec x 15-3/4" saddle		.40	20		38,000	915		38,915	43,200
6201	Beam and purlin hangers, galvanized, 12 ga.									
6202	Purlin or joist size, 3" x 8"	1 Carp	1.70	4.706	C	2,025	216		2,241	2,550
6204	3" x 10"		1.70	4.706		2,175	216		2,391	2,725
6206	3" x 12"		1.65	4.848		2,500	222		2,722	3,100
6208	3" x 14"		1.65	4.848		2,675	222		2,897	3,275
6210	3" x 16"		1.65	4.848		2,825	222		3,047	3,450
6212	4" x 8"		1.65	4.848		2,025	222		2,247	2,600
6214	4" x 10"		1.65	4.848		2,200	222		2,422	2,775
6216	4" x 12"		1.60	5		2,600	229		2,829	3,200
6218	4" x 14"		1.60	5		2,750	229		2,979	3,375
6220	4" x 16"		1.60	5		2,925	229		3,154	3,575
6222	6" x 8"		1.60	5		2,625	229		2,854	3,225
6224	6" x 10"		1.55	5.161		2,675	237		2,912	3,325
6226	6" x 12"		1.55	5.161		4,575	237		4,812	5,425
6228	6" x 14"		1.50	5.333		4,850	245		5,095	5,725
6230	6" x 16"		1.50	5.333		5,125	245		5,370	6,025
6250	Beam seats									
6252	Beam size, 5-1/4" wide									
6254	5" x 7" x 1/4"	1 Carp	1.80	4.444	C	7,725	204		7,929	8,800
6256	6" x 7" x 3/8"		1.80	4.444		8,650	204		8,854	9,850
6258	7" x 7" x 3/8"		1.80	4.444		9,250	204		9,454	10,500
6260	8" x 7" x 3/8"		1.80	4.444		10,900	204		11,104	12,300
6262	Beam size, 6-7/8" wide									
6264	5" x 9" x 1/4"	1 Carp	1.80	4.444	C	9,225	204		9,429	10,400
6266	6" x 9" x 3/8"		1.80	4.444		12,000	204		12,204	13,500
6268	7" x 9" x 3/8"		1.80	4.444		12,200	204		12,404	13,700
6270	8" x 9" x 3/8"		1.80	4.444		14,400	204		14,604	16,200
6272	Special beams, over 6-7/8" wide									
6274	5" x 10" x 3/8"	1 Carp	1.80	4.444	C	12,500	204		12,704	14,000
6276	6" x 10" x 3/8"		1.80	4.444		14,600	204		14,804	16,300
6278	7" x 10" x 3/8"		1.80	4.444		15,200	204		15,404	17,000
6280	8" x 10" x 3/8"		1.75	4.571		16,300	210		16,510	18,200
6282	5-1/4" x 12" x 5/16"		1.75	4.571		12,600	210		12,810	14,200
6284	6-1/2" x 12" x 3/8"		1.75	4.571		20,900	210		21,110	23,300
6286	5-1/4" x 16" x 5/16"		1.70	4.706		18,600	216		18,816	20,700
6288	6-1/2" x 16" x 3/8"		1.70	4.706		24,200	216		24,416	27,000
6290	5-1/4" x 20" x 5/16"		1.70	4.706		21,800	216		22,016	24,300
6292	6-1/2" x 20" x 3/8"		1.65	4.848		28,500	222		28,722	31,700
6300	Column bases									
6302	4 x 4, 16 ga.	1 Carp	1.80	4.444	C	780	204		984	1,175
6306	7 ga.		1.80	4.444		2,850	204		3,054	3,475
6308	4 x 6, 16 ga.		1.80	4.444		1,825	204		2,029	2,325
6312	7 ga.		1.80	4.444		2,975	204		3,179	3,600
6314	6 x 6, 16 ga.		1.75	4.571		2,050	210		2,260	2,600
6318	7 ga.		1.75	4.571		4,075	210		4,285	4,800
6320	6 x 8, 7 ga.		1.70	4.706		3,175	216		3,391	3,800
6322	6 x 10, 7 ga.		1.70	4.706		3,400	216		3,616	4,050
6324	6 x 12, 7 ga.		1.70	4.706		3,675	216		3,891	4,375
6326	8 x 8, 7 ga.		1.65	4.848		6,200	222		6,422	7,175

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6330	8 x 10, 7 go.	1 Corp	1.65	4.848	C	7,425	222		7,647	8,525
6332	8 x 12, 7 ga.		1.60	5		8,075	229		8,304	9,225
6334	10 x 10, 3 go.		1.60	5		8,225	229		8,454	9,400
6336	10 x 12, 3 go.		1.60	5		9,475	229		9,704	10,800
6338	12 x 12, 3 go.	▼	1.55	5.161	▼	10,300	237		10,537	11,700
6350	Column cops, pointed, 3 go.									
6352	3-1/4" x 3-5/8"	1 Corp	1.80	4.444	C	10,400	204		10,604	11,800
6354	3-1/4" x 5-1/2"		1.80	4.444		10,400	204		10,604	11,800
6356	3-5/8" x 3-5/8"		1.80	4.444		8,550	204		8,754	9,725
6358	3-5/8" x 5-1/2"		1.80	4.444		8,550	204		8,754	9,725
6360	5-1/4" x 5-1/2"		1.75	4.571		11,200	210		11,410	12,600
6362	5-1/4" x 7-1/2"		1.75	4.571		11,200	210		11,410	12,600
6364	5-1/2" x 3-5/8"		1.75	4.571		12,100	210		12,310	13,600
6366	5-1/2" x 5-1/2"		1.75	4.571		12,100	210		12,310	13,600
6368	5-1/2" x 7-1/2"		1.70	4.706		12,100	216		12,316	13,600
6370	6-7/8" x 5-1/2"		1.70	4.706		12,600	216		12,816	14,100
6372	6-7/8" x 6-7/8"		1.70	4.706		12,600	216		12,816	14,100
6374	6-7/8" x 7-1/2"		1.70	4.706		12,600	216		12,816	14,100
6376	7-1/2" x 5-1/2"		1.65	4.848		13,100	222		13,322	14,800
6378	7-1/2" x 7-1/2"		1.65	4.848		13,100	222		13,322	14,800
6380	8-7/8" x 5-1/2"		1.60	5		13,900	229		14,129	15,700
6382	8-7/8" x 7-1/2"		1.60	5		13,900	229		14,129	15,700
6384	9-1/2" x 5-1/2"		1.60	5		18,800	229		19,029	21,000
6400	Floor tie anchors, polymer point									
6402	10 go., 3" x 37-1/2"	1 Corp	1.80	4.444	C	5,000	204		5,204	5,825
6404	3-1/2" x 45-1/2"		1.75	4.571		5,250	210		5,460	6,100
6406	3 go., 3-1/2" x 56"	▼	1.70	4.706	▼	9,250	216		9,466	10,500
6410	Girder hangers									
6412	6" woll thickness, 4" x 6"	1 Corp	1.80	4.444	C	2,800	204		3,004	3,425
6414	4" x 8"		1.80	4.444		3,150	204		3,354	3,775
6416	8" woll thickness, 4" x 6"		1.80	4.444		3,250	204		3,454	3,900
6418	4" x 8"	▼	1.80	4.444	▼	3,250	204		3,454	3,900
6420	Hinge connections, polymer pointed									
6422	3/4" thick top plate									
6424	5-1/4" x 12" w/5" x 5" top	1 Corp	1	8	C	35,900	365		36,265	40,100
6426	5-1/4" x 15" w/6" x 6" top		.80	10		38,100	460		38,560	42,600
6428	5-1/4" x 18" w/7" x 7" top		.70	11.429		40,100	525		40,625	44,900
6430	5-1/4" x 26" w/9" x 9" top	▼	.60	13.333	▼	42,700	610		43,310	47,800
6432	1" thick top plate									
6434	6-7/8" x 14" w/5" x 5" top	1 Corp	.80	10	C	43,700	460		44,160	48,800
6436	6-7/8" x 17" w/6" x 6" top		.80	10		48,600	460		49,060	54,000
6438	6-7/8" x 21" w/7" x 7" top		.70	11.429		53,000	525		53,525	59,500
6440	6-7/8" x 31" w/9" x 9" top	▼	.60	13.333	▼	58,000	610		58,610	65,000
6442	1-1/4" thick top plate									
6444	8-7/8" x 16" w/5" x 5" top	1 Corp	.60	13.333	C	54,500	610		55,110	61,000
6446	8-7/8" x 21" w/6" x 6" top		.50	16		60,000	735		60,735	67,000
6448	8-7/8" x 26" w/7" x 7" top		.40	20		68,000	915		68,915	76,000
6450	8-7/8" x 39" w/9" x 9" top	▼	.30	26.667	▼	84,500	1,225		85,725	95,000
6460	Holddowns									
6462	Embedded along edge									
6464	26" long, 12 go.	1 Corp	.90	8.889	C	1,375	410		1,785	2,125
6466	35" long, 12 go.		.85	9.412		1,800	430		2,230	2,675
6468	35" long, 10 go.	▼	.85	9.412	▼	1,450	430		1,880	2,250

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6470	Embedded owoy from edge									
6472	Medium duty, 12 go.									
6474	18-1/2" long	1 Corp	.95	8.421	C	825	385		1,210	1,500
6476	23-3/4" long		.90	8.889		965	410		1,375	1,675
6478	28" long		.85	9.412		985	430		1,415	1,750
6480	35" long	▼	.85	9.412	▼	1,350	430		1,780	2,150
6482	Heavy duty, 10 go.									
6484	28" long	1 Corp	.85	9.412	C	1,750	430		2,180	2,625
6486	35" long	"	.85	9.412	"	1,925	430		2,355	2,775
6490	Surface mounted (W x H)									
6492	2-1/2" x 5-3/4", 7 go.	1 Corp	1	8	C	2,000	365		2,365	2,775
6494	2-1/2" x 8", 12 go.		1	8		1,225	365		1,590	1,925
6496	2-7/8" x 6-3/8", 7 go.		1	8		4,425	365		4,790	5,450
6498	2-7/8" x 12-1/2", 3 go.		1	8		4,550	365		4,915	5,575
6500	3-3/16" x 9-3/8", 10 go.		1	8		3,025	365		3,390	3,925
6502	3-1/2" x 11-5/8", 3 go.		1	8		5,525	365		5,890	6,675
6504	3-1/2" x 14-3/4", 3 go.		1	8		7,000	365		7,365	8,275
6506	3-1/2" x 16-1/2", 3 go.		1	8		8,450	365		8,815	9,875
6508	3-1/2" x 20-1/2", 3 go.		.90	8.889		8,650	410		9,060	10,200
6510	3-1/2" x 24-1/2", 3 go.		.90	8.889		10,900	410		11,310	12,600
6512	4-1/4" x 20-3/4", 3 go.		.90	8.889		7,450	410		7,860	8,825
6520	Joist hangers									
6522	Sloped, field adjustable, 18 go.									
6524	2" x 6"	1 Corp	1.65	4.848	C	545	222		767	945
6526	2" x 8"		1.65	4.848		980	222		1,202	1,425
6528	2" x 10" and up		1.65	4.848		1,625	222		1,847	2,150
6530	3" x 10" and up		1.60	5		1,225	229		1,454	1,700
6532	4" x 10" and up		1.55	5.161		1,475	237		1,712	2,000
6536	Skewed 45°, 16 go.									
6538	2" x 4"	1 Corp	1.75	4.571	C	870	210		1,080	1,275
6540	2" x 6" or 2" x 8"		1.65	4.848		885	222		1,107	1,325
6542	2" x 10" or 2" x 12"		1.65	4.848		1,025	222		1,247	1,475
6544	2" x 14" or 2" x 16"		1.60	5		1,825	229		2,054	2,350
6546	(2) 2" x 6" or (2) 2" x 8"		1.60	5		1,650	229		1,879	2,150
6548	(2) 2" x 10" or (2) 2" x 12"		1.55	5.161		1,750	237		1,987	2,325
6550	(2) 2" x 14" or (2) 2" x 16"		1.50	5.333		2,775	245		3,020	3,425
6552	4" x 6" or 4" x 8"		1.60	5		1,375	229		1,604	1,850
6554	4" x 10" or 4" x 12"		1.55	5.161		1,600	237		1,837	2,150
6556	4" x 14" or 4" x 16"		1.55	5.161	▼	2,475	237		2,712	3,100
6560	Skewed 45°, 14 go.									
6562	(2) 2" x 6" or (2) 2" x 8"	1 Corp	1.60	5	C	1,900	229		2,129	2,425
6564	(2) 2" x 10" or (2) 2" x 12"		1.55	5.161		2,625	237		2,862	3,250
6566	(2) 2" x 14" or (2) 2" x 16"		1.50	5.333		3,850	245		4,095	4,600
6568	4" x 6" or 4" x 8"		1.60	5		2,250	229		2,479	2,825
6570	4" x 10" or 4" x 12"		1.55	5.161		2,375	237		2,612	2,975
6572	4" x 14" or 4" x 16"	▼	1.55	5.161	▼	3,175	237		3,412	3,875
6590	Joist hangers, heavy duty 12 go., galvanized									
6592	2" x 4"	1 Corp	1.75	4.571	C	1,275	210		1,485	1,725
6594	2" x 6"		1.65	4.848		1,400	222		1,622	1,875
6595	2" x 6", 16 go.		1.65	4.848		1,325	222		1,547	1,800
6596	2" x 8"		1.65	4.848		2,100	222		2,322	2,675
6597	2" x 8", 16 go.		1.65	4.848		2,000	222		2,222	2,550
6598	2" x 10"		1.65	4.848		2,175	222		2,397	2,725

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6600	2" x 12"	1 Carp	1.65	4.848	C	2,675	222		2,897	3,275
6602	2" x 14"		1.65	4.848		2,775	222		2,997	3,400
6604	2" x 16"		1.65	4.848		2,925	222		3,147	3,575
6606	3" x 4"		1.65	4.848		1,775	222		1,997	2,300
6608	3" x 6"		1.65	4.848		2,375	222		2,597	2,950
6610	3" x 8"		1.65	4.848		2,400	222		2,622	3,000
6612	3" x 10"		1.60	5		2,775	229		3,004	3,425
6614	3" x 12"		1.60	5		3,350	229		3,579	4,025
6616	3" x 14"		1.60	5		3,900	229		4,129	4,650
6618	3" x 16"		1.60	5		4,300	229		4,529	5,100
6620	(2) 2" x 4"		1.75	4.571		2,075	210		2,285	2,600
6622	(2) 2" x 6"		1.60	5		2,500	229		2,729	3,100
6624	(2) 2" x 8"		1.60	5		2,550	229		2,779	3,150
6626	(2) 2" x 10"		1.55	5.161		2,750	237		2,987	3,400
6628	(2) 2" x 12"		1.55	5.161		3,525	237		3,762	4,250
6630	(2) 2" x 14"		1.50	5.333		3,550	245		3,795	4,300
6632	(2) 2" x 16"		1.50	5.333		3,600	245		3,845	4,325
6634	4" x 4"		1.65	4.848		1,500	222		1,722	2,000
6636	4" x 6"		1.60	5		1,650	229		1,879	2,175
6638	4" x 8"		1.60	5		1,900	229		2,129	2,450
6640	4" x 10"		1.55	5.161		2,350	237		2,587	2,950
6642	4" x 12"		1.55	5.161		2,500	237		2,737	3,125
6644	4" x 14"		1.55	5.161		2,975	237		3,212	3,650
6646	4" x 16"		1.55	5.161		3,275	237		3,512	3,975
6648	(3) 2" x 10"		1.50	5.333		3,625	245		3,870	4,350
6650	(3) 2" x 12"		1.50	5.333		4,025	245		4,270	4,825
6652	(3) 2" x 14"		1.45	5.517		4,325	253		4,578	5,150
6654	(3) 2" x 16"		1.45	5.517		4,400	253		4,653	5,250
6656	6" x 6"		1.60	5		1,950	229		2,179	2,500
6658	6" x 8"		1.60	5		2,000	229		2,229	2,550
6660	6" x 10"		1.55	5.161		2,400	237		2,637	3,000
6662	6" x 12"		1.55	5.161		2,725	237		2,962	3,375
6664	6" x 14"		1.50	5.333		3,425	245		3,670	4,125
6666	6" x 16"	▼	1.50	5.333	▼	4,025	245		4,270	4,800
6690	Knee braces, galvanized, 12 ga.									
6692	Beam depth, 10" x 15" x 5' long	1 Carp	1.80	4.444	C	5,225	204		5,429	6,075
6694	15" x 22-1/2" x 7' long		1.70	4.706		6,000	216		6,216	6,925
6696	22-1/2" x 28-1/2" x 8' long		1.60	5		6,450	229		6,679	7,450
6698	28-1/2" x 36" x 10' long		1.55	5.161		6,725	237		6,962	7,775
6700	36" x 42" x 12' long	▼	1.50	5.333	▼	7,425	245		7,670	8,525
6710	Mudsill anchors									
6714	2" x 4" or 3" x 4"	1 Carp	115	.070	C	1,350	3.19		1,353.19	1,475
6716	2" x 6" or 3" x 6"		115	.070		1,350	3.19		1,353.19	1,475
6718	Block wall, 13-1/4" long		115	.070		85	3.19		88.19	98.50
6720	21-1/4" long	▼	115	.070	▼	126	3.19		129.19	144
6730	Post bases, 12 ga. galvanized									
6732	Adjustable, 3-9/16" x 3-9/16"	1 Carp	1.30	6.154	C	1,075	282		1,357	1,600
6734	3-9/16" x 5-1/2"		1.30	6.154		2,025	282		2,307	2,650
6736	4" x 4"		1.30	6.154		930	282		1,212	1,450
6738	4" x 6"		1.30	6.154		2,700	282		2,982	3,400
6740	5-1/2" x 5-1/2"		1.30	6.154		3,325	282		3,607	4,075
6742	6" x 6"		1.30	6.154		3,325	282		3,607	4,075
6744	Elevated, 3-9/16" x 3-1/4"		1.30	6.154		1,150	282		1,432	1,700

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6746	5-1/2" x 3-5/16"	1 Corp	1.30	6.154	C	1,650	282		1,932	2,225
6748	5-1/2" x 5"		1.30	6.154		2,475	282		2,757	3,125
6750	Regular, 3-9/16" x 3-3/8"		1.30	6.154		885	282		1,167	1,400
6752	4" x 3-3/8"		1.30	6.154		1,250	282		1,532	1,800
6754	18 ga., 5-1/4" x 3-1/8"		1.30	6.154		1,300	282		1,582	1,850
6755	5-1/2" x 3-3/8"		1.30	6.154		1,300	282		1,582	1,850
6756	5-1/2" x 5-3/8"		1.30	6.154		1,875	282		2,157	2,475
6758	6" x 3-3/8"		1.30	6.154		2,250	282		2,532	2,900
6760	6" x 5-3/8"		1.30	6.154		2,500	282		2,782	3,200
6762	Post combination cop/bases									
6764	3-9/16" x 3-9/16"	1 Corp	1.20	6.667	C	460	305		765	980
6766	3-9/16" x 5-1/2"		1.20	6.667		1,050	305		1,355	1,625
6768	4" x 4"		1.20	6.667		2,075	305		2,380	2,775
6770	5-1/2" x 5-1/2"		1.20	6.667		1,150	305		1,455	1,750
6772	6" x 6"		1.20	6.667		4,175	305		4,480	5,075
6774	7-1/2" x 7-1/2"		1.20	6.667		4,575	305		4,880	5,500
6776	8" x 8"		1.20	6.667		4,725	305		5,030	5,675
6790	Post-beam connection ceps									
6792	Beam size 3-9/16"									
6794	12 ga. post, 4" x 4"	1 Corp	1	8	C	2,900	365		3,265	3,750
6796	4" x 6"		1	8		3,850	365		4,215	4,825
6798	4" x 8"		1	8		5,700	365		6,065	6,850
6800	16 ga. post, 4" x 4"		1	8		1,200	365		1,565	1,875
6802	4" x 6"		1	8		2,000	365		2,365	2,775
6804	4" x 8"		1	8		3,350	365		3,715	4,275
6805	18 ga. post, 2-7/8" x 3"		1	8		3,350	365		3,715	4,275
6806	Beam size 5-1/2"									
6808	12 ga. post, 6" x 4"	1 Corp	1	8	C	3,450	365		3,815	4,375
6810	6" x 6"		1	8		5,450	365		5,815	6,575
6812	6" x 8"		1	8		3,750	365		4,115	4,700
6816	16 ga. post, 6" x 4"		1	8		1,875	365		2,240	2,650
6818	6" x 6"		1	8		2,000	365		2,365	2,775
6820	Beam size 7-1/2"									
6822	12 ga. post, 8" x 4"	1 Corp	1	8	C	4,775	365		5,140	5,850
6824	8" x 6"		1	8		5,025	365		5,390	6,100
6826	8" x 8"		1	8		7,550	365		7,915	8,875
6840	Purlin anchors, embedded									
6842	Heavy duty, 10 ga.									
6844	Straight, 28" long	1 Corp	1.60	5	C	1,450	229		1,679	1,925
6846	35" long		1.50	5.333		1,775	245		2,020	2,325
6848	Twisted, 28" long		1.60	5		1,450	229		1,679	1,925
6850	35" long		1.50	5.333		1,775	245		2,020	2,325
6852	Regular duty, 12 ga.									
6854	Straight, 18-1/2" long	1 Corp	1.80	4.444	C	825	204		1,029	1,225
6856	23-3/4" long		1.70	4.706		1,025	216		1,241	1,475
6858	29" long		1.60	5		1,050	229		1,279	1,525
6860	35" long		1.50	5.333		1,450	245		1,695	1,975
6862	Twisted, 18" long		1.80	4.444		825	204		1,029	1,225
6866	28" long		1.60	5		980	229		1,209	1,425
6868	35" long		1.50	5.333		1,450	245		1,695	1,975
6870	Straight, plastic coated									
6872	23-1/2" long	1 Corp	1.60	5	C	2,025	229		2,254	2,575
6874	26-7/8" long		1.60	5		2,375	229		2,604	2,950

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6876	32-1/2" long	1 Corp	1.50	5.333	C	2,525	245		2,770	3,150
6878	35-7/8" long	▼	1.50	5.333	▼	2,625	245		2,870	3,275
6890	Purlin hangers, painted									
6892	12 ga., 2" x 6"	1 Corp	1.80	4.444	C	1,850	204		2,054	2,375
6894	2" x 8"		1.80	4.444		2,025	204		2,229	2,550
6896	2" x 10"		1.80	4.444		2,175	204		2,379	2,725
6898	2" x 12"		1.75	4.571		2,350	210		2,560	2,900
6900	2" x 14"		1.75	4.571		2,500	210		2,710	3,075
6902	2" x 16"		1.75	4.571		2,650	210		2,860	3,250
6904	3" x 6"		1.70	4.706		1,875	216		2,091	2,375
6906	3" x 8"		1.70	4.706		2,025	216		2,241	2,550
6908	3" x 10"		1.70	4.706		2,175	216		2,391	2,725
6910	3" x 12"		1.65	4.848		2,500	222		2,722	3,100
6912	3" x 14"		1.65	4.848		2,675	222		2,897	3,275
6914	3" x 16"		1.65	4.848		2,825	222		3,047	3,450
6916	4" x 6"		1.65	4.848		1,875	222		2,097	2,425
6918	4" x 8"		1.65	4.848		2,025	222		2,247	2,600
6920	4" x 10"		1.65	4.848		2,200	222		2,422	2,775
6922	4" x 12"		1.60	5		2,600	229		2,829	3,200
6924	4" x 14"		1.60	5		2,750	229		2,979	3,375
6926	4" x 16"		1.60	5		2,925	229		3,154	3,575
6928	6" x 6"		1.60	5		2,475	229		2,704	3,075
6930	6" x 8"		1.60	5		2,625	229		2,854	3,225
6932	6" x 10"		1.55	5.161		2,675	237		2,912	3,325
6934	double 2" x 6"		1.70	4.706		2,025	216		2,241	2,550
6936	double 2" x 8"		1.70	4.706		2,175	216		2,391	2,725
6938	double 2" x 10"		1.70	4.706		2,350	216		2,566	2,900
6940	double 2" x 12"		1.65	4.848		2,500	222		2,722	3,100
6942	double 2" x 14"		1.65	4.848		2,675	222		2,897	3,275
6944	double 2" x 16"		1.65	4.848		2,825	222		3,047	3,450
6960	11 ga., 4" x 6"		1.65	4.848		3,700	222		3,922	4,425
6962	4" x 8"		1.65	4.848		3,975	222		4,197	4,725
6964	4" x 10"		1.65	4.848		4,250	222		4,472	5,025
6966	6" x 6"		1.60	5		3,750	229		3,979	4,475
6968	6" x 8"		1.60	5		4,025	229		4,254	4,775
6970	6" x 10"		1.55	5.161		4,300	237		4,537	5,100
6972	6" x 12"		1.55	5.161		4,575	237		4,812	5,425
6974	6" x 14"		1.55	5.161		4,850	237		5,087	5,725
6976	6" x 16"		1.50	5.333		5,125	245		5,370	6,025
6978	7 ga., 8" x 6"		1.60	5		4,075	229		4,304	4,825
6980	8" x 8"		1.60	5		4,350	229		4,579	5,125
6982	8" x 10"		1.55	5.161		4,625	237		4,862	5,475
6984	8" x 12"		1.55	5.161		4,900	237		5,137	5,775
6986	8" x 14"		1.50	5.333		5,175	245		5,420	6,075
6988	8" x 16"		1.50	5.333	▼	5,450	245		5,695	6,375
7000	Strap connectors, galvanized									
7002	12 ga., 2-1/16" x 36"	1 Corp	1.55	5.161	C	1,175	237		1,412	1,675
7004	2-1/16" x 47"		1.50	5.333		1,650	245		1,895	2,175
7005	10 ga., 2-1/16" x 72"		1.50	5.333		1,725	245		1,970	2,275
7006	7 ga., 2-1/16" x 34"		1.55	5.161		2,925	237		3,162	3,600
7008	2-1/16" x 45"		1.50	5.333		3,825	245		4,070	4,575
7010	3 ga., 3" x 32"		1.55	5.161		4,925	237		5,162	5,800
7012	3" x 41"		1.55	5.161	▼	5,125	237		5,362	6,025

06 05 Common Work Results for Wood, Plastics, and Composites

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Crew	Doily Output	Labor- Hours	Unit	Material	2014 Bore Costs		Total	Total Incl O&P
							Labor	Equipment		
7014	3" x 50"	1 Corp	1.50	5.333	C	7,825	245		8,070	8,975
7016	3" x 59"		1.50	5.333		9,525	245		9,770	10,900
7018	3-1/2" x 68"		1.45	5.517	▼	9,675	253		9,928	11,000
7030	Tension ties									
7032	19-1/8" long, 16 go., 3/4" anchor bolt	1 Corp	1.80	4.444	C	1,350	204		1,554	1,825
7034	20" long, 12 go., 1/2" anchor bolt		1.80	4.444		1,750	204		1,954	2,250
7036	20" long, 12 go., 3/4" anchor bolt		1.80	4.444		1,750	204		1,954	2,250
7038	27-3/4" long, 12 go., 3/4" anchor bolt		1.75	4.571	▼	3,100	210		3,310	3,750
7050	Truss connectors, galvanized									
7052	Adjustable honger									
7054	18 go., 2" x 6"	1 Corp	1.65	4.848	C	530	222		752	930
7056	4" x 6"		1.65	4.848		700	222		922	1,125
7058	16 go., 4" x 10"		1.60	5		1,025	229		1,254	1,475
7060	(2) 2" x 10"		1.60	5		1,025	229		1,254	1,475
7062	Connectors to plote									
7064	16 go., 2" x 4" plote	1 Corp	1.80	4.444	C	525	204		729	890
7066	2" x 6" plote	"	1.80	4.444	"	675	204		879	1,050
7068	Hip jock connector									
7070	14 go.	1 Corp	1.50	5.333	C	2,750	245		2,995	3,400

06 05 23.70 Rough Hardware

0010	ROUGH HARDWARE, overage percent of carpentry material									
0020	Minimum				Job	.50%				
0200	Maximum					1.50%				
0210	In seismic or hurricane areas, up to					10%				

06 05 23.80 Metal Bracing

0010	METAL BRACING									
0302	Let-in, "T" shaped, 22 go. galv. steel, studs at 16" O.C.	1 Corp	580	.014	L.F.	.81	.63		1.44	1.87
0402	Studs at 24" O.C.		600	.013		.81	.61		1.42	1.83
0502	16 go. galv. steel strops, studs at 16" O.C.		600	.013		1.05	.61		1.66	2.10
0602	Studs at 24" O.C.	▼	620	.013	▼	1.05	.59		1.64	2.07

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.01 Forest Stewardship Council Certification

0010	FOREST STEWARDSHIP COUNCIL CERTIFICATION									
0020	For Forest Stewardship Council (FSC) cert dimension lumber, odd	G				65%				

06 11 10.02 Blocking

0010	BLOCKING									
2600	Miscellaneous, to wood construction									
2620	2" x 4"	1 Corp	.17	47.059	M.B.F.	570	2,150		2,720	3,950
2625	Pneumatic nailed		.21	38.095		575	1,750		2,325	3,325
2660	2" x 8"		.27	29.630		645	1,350		1,995	2,800
2665	Pneumatic nailed	▼	.33	24.242	▼	650	1,100		1,750	2,450
2720	To steel construction									
2740	2" x 4"	1 Corp	.14	57.143	M.B.F.	570	2,625		3,195	4,675
2780	2" x 8"	"	.21	38.095	"	645	1,750		2,395	3,400

06 11 10.04 Wood Bracing

0010	WOOD BRACING									
0012	Let-in, with 1" x 6" boards, studs @ 16" O.C.	1 Corp	150	.053	L.F.	.80	2.45		3.25	4.65
0202	Studs @ 24" O.C.	"	230	.035	"	.80	1.59		2.39	3.34

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.06 Bridging		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	BRIDGING									
0012	Wood, for joists 16" O.C., 1" x 3"	1 Carp	130	.062	Pr.	.62	2.82		3.44	5.05
0017	Pneumatic nailed		170	.047		.68	2.16		2.84	4.08
0102	2" x 3" bridging		130	.062		.64	2.82		3.46	5.05
0107	Pneumatic nailed		170	.047		.66	2.16		2.82	4.06
0302	Steel, galvanized, 18 ga., for 2" x 10" joists at 12" O.C.		130	.062		.90	2.82		3.72	5.35
0352	16" O.C.		135	.059		.93	2.72		3.65	5.20
0402	24" O.C.		140	.057		1.90	2.62		4.52	6.15
0602	For 2" x 14" joists at 16" O.C.		130	.062		1.40	2.82		4.22	5.90
0902	Compression type, 16" O.C., 2" x 8" joists		200	.040		.93	1.83		2.76	3.85
1002	2" x 12" joists		200	.040		.93	1.83		2.76	3.85

06 11 10.10 Beam and Girder Framing

0010	BEAM AND GIRDER FRAMING									
		R061110-30								
3500	Single, 2" x 6"	2 Carp	.70	22.857	M.B.F.	570	1,050		1,620	2,250
3505	Pneumatic nailed		.81	19.704		575	905		1,480	2,025
3520	2" x 8"		.86	18.605		645	855		1,500	2,025
3525	Pneumatic nailed		1	16.048		650	735		1,385	1,850
3540	2" x 10"		1	16		680	735		1,415	1,875
3545	Pneumatic nailed		1.16	13.793		685	630		1,315	1,725
3560	2" x 12"		1.10	14.545		770	665		1,435	1,875
3565	Pneumatic nailed		1.28	12.539		775	575		1,350	1,750
3580	2" x 14"		1.17	13.675		770	625		1,395	1,825
3585	Pneumatic nailed		1.36	11.791		775	540		1,315	1,700
3600	3" x 8"		1.10	14.545		1,275	665		1,940	2,425
3620	3" x 10"		1.25	12.800		1,275	585		1,860	2,325
3640	3" x 12"		1.35	11.852		1,275	545		1,820	2,275
3660	3" x 14"		1.40	11.429		1,275	525		1,800	2,225
3680	4" x 8"	F-3	2.66	15.038		1,300	705	249	2,254	2,800
3700	4" x 10"		3.16	12.658		1,275	590	210	2,075	2,550
3720	4" x 12"		3.60	11.111		1,275	520	184	1,979	2,400
3740	4" x 14"		3.96	10.101		1,450	470	167	2,087	2,500
4000	Double, 2" x 6"	2 Carp	1.25	12.800		570	585		1,155	1,525
4005	Pneumatic nailed		1.45	11.034		575	505		1,080	1,425
4020	2" x 8"		1.60	10		645	460		1,105	1,425
4025	Pneumatic nailed		1.86	8.621		650	395		1,045	1,325
4040	2" x 10"		1.92	8.333		680	380		1,060	1,350
4045	Pneumatic nailed		2.23	7.185		685	330		1,015	1,275
4060	2" x 12"		2.20	7.273		770	335		1,105	1,375
4065	Pneumatic nailed		2.55	6.275		775	288		1,063	1,300
4080	2" x 14"		2.45	6.531		770	299		1,069	1,300
4085	Pneumatic nailed		2.84	5.634		775	258		1,033	1,250
5000	Triple, 2" x 6"		1.65	9.697		570	445		1,015	1,300
5005	Pneumatic nailed		1.91	8.377		575	385		960	1,225
5020	2" x 8"		2.10	7.619		645	350		995	1,250
5025	Pneumatic nailed		2.44	6.568		650	300		950	1,175
5040	2" x 10"		2.50	6.400		680	293		973	1,200
5045	Pneumatic nailed		2.90	5.517		685	253		938	1,150
5060	2" x 12"		2.85	5.614		770	257		1,027	1,250
5065	Pneumatic nailed		3.31	4.840		775	222		997	1,200
5080	2" x 14"		3.15	5.079		770	233		1,003	1,200
5085	Pneumatic nailed		3.35	4.770		775	219		994	1,200

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
06 11 10.12 Ceiling Framing										
0010	CEILING FRAMING									
6400	Suspended, 2" x 3"	2 Corp	.50	32	M.B.F.	745	1,475		2,220	3,100
6450	2" x 4"		.59	27.119		570	1,250		1,820	2,550
6500	2" x 6"		.80	20		570	915		1,485	2,050
6550	2" x 8"	▼	.86	18.605	▼	645	855		1,500	2,025
06 11 10.14 Posts and Columns										
0010	POSTS AND COLUMNS									
0400	4" x 4"	2 Corp	.52	30.769	M.B.F.	1,300	1,400		2,700	3,600
0420	4" x 6"		.55	29.091		1,300	1,325		2,625	3,475
0440	4" x 8"		.59	27.119		1,325	1,250		2,575	3,375
0460	6" x 6"		.65	24.615		1,600	1,125		2,725	3,500
0480	6" x 8"		.70	22.857		1,600	1,050		2,650	3,375
0500	6" x 10"	▼	.75	21.333	▼	1,600	980		2,580	3,250
06 11 10.18 Joist Framing										
0010	JOIST FRAMING									
2650	Joists, 2" x 4"	2 Corp	.83	19.277	M.B.F.	570	885		1,455	2,000
2655	Pneumotic noiled		.96	16.667		575	765		1,340	1,800
2680	2" x 6"		1.25	12.800		570	585		1,155	1,525
2685	Pneumotic noiled		1.44	11.111		575	510		1,085	1,425
2700	2" x 8"		1.46	10.959		645	500		1,145	1,475
2705	Pneumotic noiled		1.68	9.524		650	435		1,085	1,400
2720	2" x 10"		1.49	10.738		680	490		1,170	1,500
2725	Pneumotic noiled		1.71	9.357		685	430		1,115	1,425
2740	2" x 12"		1.75	9.143		770	420		1,190	1,500
2745	Pneumotic noiled		2.01	7.960		775	365		1,140	1,425
2760	2" x 14"		1.79	8.939		770	410		1,180	1,475
2765	Pneumotic noiled		2.06	7.767		775	355		1,130	1,400
2780	3" x 6"		1.39	11.511		940	530		1,470	1,850
2790	3" x 8"		1.90	8.421		1,275	385		1,660	2,000
2800	3" x 10"		1.95	8.205		1,275	375		1,650	2,000
2820	3" x 12"		1.80	8.889		1,275	410		1,685	2,050
2840	4" x 6"		1.60	10		1,300	460		1,760	2,125
2860	4" x 10"		2	8		1,275	365		1,640	1,975
2880	4" x 12"		1.80	8.889		1,275	410		1,685	2,025
3000	Composite wood joist 9-1/2" deep		.90	17.778	M.L.F.	1,725	815		2,540	3,150
3010	11-1/2" deep		.88	18.182		1,950	835		2,785	3,425
3020	14" deep		.82	19.512		2,325	895		3,220	3,925
3030	16" deep		.78	20.513		3,425	940		4,365	5,225
4000	Open web joist 12" deep		.88	18.182	▼	3,100	835		3,935	4,675
4002	Per linear foot		880	.018	L.F.	3.10	.83		3.93	4.70
4004	Treated, per linear foot		880	.018	"	3.97	.83		4.80	5.65
4010	14" deep		.82	19.512	M.L.F.	3,275	895		4,170	4,975
4012	Per linear foot		820	.020	L.F.	3.27	.89		4.16	4.98
4014	Treated, per linear foot		820	.020	"	4.28	.89		5.17	6.10
4020	16" deep		.78	20.513	M.L.F.	3,650	940		4,590	5,475
4022	Per linear foot		780	.021	L.F.	3.66	.94		4.60	5.45
4024	Treated, per linear foot		780	.021	"	4.81	.94		5.75	6.75
4030	18" deep		.74	21.622	M.L.F.	4,000	990		4,990	5,925
4032	Per linear foot		740	.022	L.F.	3.99	.99		4.98	5.90
4034	Treated, per linear foot		740	.022	"	5.30	.99		6.29	7.35
6000	Composite rim joist, 1-1/4" x 9-1/2"		.90	17.778	M.L.F.	1,875	815		2,690	3,300
6010	1-1/4" x 11-1/2"	▼	.88	18.182	▼	2,300	835		3,135	3,800

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.18 Joist Framing		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labar	Equipment		
6020	1-1/4" x 14-1/2"	2 Carp	.82	19.512	M.L.F.	2,775	895		3,670	4,425
6030	1-1/4" x 16-1/2"		.78	20.513		3,300	940		4,240	5,075

06 11 10.24 Miscellaneous Framing

0010	MISCELLANEOUS FRAMING									
8500	Firestops, 2" x 4"	2 Carp	.51	31.373	M.B.F.	570	1,450		2,020	2,850
8505	Pneumatic nailed		.62	25.806		575	1,175		1,750	2,450
8520	2" x 6"		.60	26.667		570	1,225		1,795	2,500
8525	Pneumatic nailed		.73	21.858		575	1,000		1,575	2,175
8540	2" x 8"		.60	26.667		645	1,225		1,870	2,575
8560	2" x 12"		.70	22.857		770	1,050		1,820	2,475
8600	Nailers, treated, waad construction, 2" x 4"		.53	30.189		735	1,375		2,110	2,925
8605	Pneumatic nailed		.64	25.157		745	1,150		1,895	2,600
8620	2" x 6"		.75	21.333		760	980		1,740	2,325
8625	Pneumatic nailed		.90	17.778		765	815		1,580	2,100
8640	2" x 8"		.93	17.204		760	790		1,550	2,050
8645	Pneumatic nailed		1.12	14.337		765	655		1,420	1,875
8660	Steel construction, 2" x 4"		.50	32		740	1,475		2,215	3,075
8680	2" x 6"		.70	22.857		760	1,050		1,810	2,450
8700	2" x 8"		.87	18.391		760	845		1,605	2,125
8760	Rough bucks, treated, for daars or windows, 2" x 6"		.40	40		760	1,825		2,585	3,650
8765	Pneumatic nailed		.48	33.333		765	1,525		2,290	3,200
8780	2" x 8"		.51	31.373		760	1,450		2,210	3,050
8785	Pneumatic nailed		.61	26.144		765	1,200		1,965	2,700
8800	Stair stringers, 2" x 10"		.22	72.727		680	3,325		4,005	5,900
8820	2" x 12"		.26	61.538		770	2,825		3,595	5,200
8840	3" x 10"		.31	51.613		1,275	2,375		3,650	5,075
8860	3" x 12"		.38	42.105		1,275	1,925		3,200	4,400
8870	Laminated structural lumber, 1-1/4" x 11-1/2"		130	.123	L.F.	2.30	5.65		7.95	11.25
8880	1-1/4" x 14-1/2"		130	.123	"	2.76	5.65		8.41	11.75

06 11 10.26 Partitions

0010	PARTITIONS									
0020	Single battam and dauble tap plate, no waste, std. & better lumber									
0180	2" x 4" studs, 8' high, studs 12" O.C.	2 Carp	80	.200	L.F.	4.17	9.15		13.32	18.75
0185	12" O.C., pneumatic nailed		96	.167		4.22	7.65		11.87	16.45
0200	16" O.C.		100	.160		3.41	7.35		10.76	15.05
0205	16" O.C., pneumatic nailed		120	.133		3.45	6.10		9.55	13.25
0300	24" O.C.		125	.128		2.65	5.85		8.50	11.95
0305	24" O.C., pneumatic nailed		150	.107		2.68	4.89		7.57	10.50
0380	10' high, studs 12" O.C.		80	.200		4.93	9.15		14.08	19.55
0385	12" O.C., pneumatic nailed		96	.167		4.98	7.65		12.63	17.30
0400	16" O.C.		100	.160		3.98	7.35		11.33	15.70
0405	16" O.C., pneumatic nailed		120	.133		4.03	6.10		10.13	13.90
0500	24" O.C.		125	.128		3.03	5.85		8.88	12.40
0505	24" O.C., pneumatic nailed		150	.107		3.07	4.89		7.96	10.90
0580	12' high, studs 12" O.C.		65	.246		5.70	11.30		17	23.50
0585	12" O.C., pneumatic nailed		78	.205		5.75	9.40		15.15	21
0600	16" O.C.		80	.200		4.55	9.15		13.70	19.15
0605	16" O.C., pneumatic nailed		96	.167		4.60	7.65		12.25	16.85
0700	24" O.C.		100	.160		3.41	7.35		10.76	15.05
0705	24" O.C., pneumatic nailed		120	.133		3.45	6.10		9.55	13.25
0780	2" x 6" studs, 8' high, studs 12" O.C.		70	.229		6.25	10.50		16.75	23
0785	12" O.C., pneumatic nailed		84	.190		6.35	8.75		15.10	20.50

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.26 Partitions		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0800	16" O.C.	2 Carp	90	.178	L.F.	5.10	8.15		13.25	18.25
0805	16" O.C., pneumatic nailed		108	.148		5.20	6.80		12	16.20
0900	24" O.C.		115	.139		3.98	6.40		10.38	14.25
0905	24" O.C., pneumatic nailed		138	.116		4.03	5.30		9.33	12.65
0980	10' high, studs 12" O.C.		70	.229		7.40	10.50		17.90	24.50
0985	12" O.C., pneumatic nailed		84	.190		7.50	8.75		16.25	22
1000	16" O.C.		90	.178		5.95	8.15		14.10	19.15
1005	16" O.C., pneumatic nailed		108	.148		6.05	6.80		12.85	17.15
1100	24" O.C.		115	.139		4.55	6.40		10.95	14.85
1105	24" O.C., pneumatic nailed		138	.116		4.60	5.30		9.90	13.25
1180	12' high, studs 12" O.C.		55	.291		8.55	13.35		21.90	30
1185	12" O.C., pneumatic nailed		66	.242		8.65	11.10		19.75	26.50
1200	16" O.C.		70	.229		6.85	10.50		17.35	23.50
1205	16" O.C., pneumatic nailed		84	.190		6.90	8.75		15.65	21
1300	24" O.C.		90	.178		5.10	8.15		13.25	18.25
1305	24" O.C., pneumatic nailed		108	.148		5.20	6.80		12	16.20
1400	For horizontal blocking, 2" x 4", add		600	.027		.38	1.22		1.60	2.31
1500	2" x 6", add		600	.027		.57	1.22		1.79	2.52
1600	For openings, add		250	.064			2.93		2.93	4.53
1700	Headers for above openings, material only, add				M.B.F.	645			645	710

06 11 10.28 Porch or Deck Framing

0010	PORCH OR DECK FRAMING									
0100	Treated lumber, posts or columns, 4" x 4"	2 Carp	390	.041	L.F.	1.22	1.88		3.10	4.24
0110	4" x 6"		275	.058		1.77	2.67		4.44	6.05
0120	4" x 8"		220	.073		3.07	3.33		6.40	8.55
0130	Girder, single, 4" x 4"		675	.024		1.22	1.09		2.31	3.02
0140	4" x 6"		600	.027		1.77	1.22		2.99	3.83
0150	4" x 8"		525	.030		3.07	1.40		4.47	5.55
0160	Double, 2" x 4"		625	.026		1.01	1.17		2.18	2.92
0170	2" x 6"		600	.027		1.56	1.22		2.78	3.61
0180	2" x 8"		575	.028		2.08	1.28		3.36	4.26
0190	2" x 10"		550	.029		2.72	1.33		4.05	5.05
0200	2" x 12"		525	.030		4.07	1.40		5.47	6.65
0210	Triple, 2" x 4"		575	.028		1.51	1.28		2.79	3.63
0220	2" x 6"		550	.029		2.34	1.33		3.67	4.63
0230	2" x 8"		525	.030		3.12	1.40		4.52	5.60
0240	2" x 10"		500	.032		4.08	1.47		5.55	6.75
0250	2" x 12"		475	.034		6.10	1.54		7.64	9.10
0260	Ledger, bolted 4' O.C., 2" x 4"		400	.040		.64	1.83		2.47	3.54
0270	2" x 6"		395	.041		.91	1.86		2.77	3.87
0280	2" x 8"		390	.041		1.16	1.88		3.04	4.17
0290	2" x 10"		385	.042		1.47	1.91		3.38	4.56
0300	2" x 12"		380	.042		2.13	1.93		4.06	5.35
0310	Joists, 2" x 4"		1250	.013		.50	.59		1.09	1.46
0320	2" x 6"		1250	.013		.78	.59		1.37	1.76
0330	2" x 8"		1100	.015		1.04	.67		1.71	2.17
0340	2" x 10"		900	.018		1.36	.82		2.18	2.75
0350	2" x 12"		875	.018		1.63	.84		2.47	3.08
0360	Roilings and trim, 1" x 4"	1 Carp	300	.027		.47	1.22		1.69	2.41
0370	2" x 2"		300	.027		.33	1.22		1.55	2.26
0380	2" x 4"		300	.027		.50	1.22		1.72	2.44
0390	2" x 6"		300	.027		.77	1.22		1.99	2.73

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.28 Porch or Deck Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0400	Decking, 1" x 4"	1 Carp	275	.029	S.F.	1.95	1.33		3.28	4.21
0410	2" x 4"		300	.027		1.67	1.22		2.89	3.73
0420	2" x 6"		320	.025		1.65	1.15		2.80	3.59
0430	5/4" x 6"		320	.025		2.04	1.15		3.19	4.01
0440	Bolusters, square, 2" x 2"	2 Corp	660	.024	L.F.	.34	1.11		1.45	2.09
0450	Turned, 2" x 2"		420	.038		.45	1.75		2.20	3.19
0460	Stair stringer, 2" x 10"		130	.123		1.36	5.65		7.01	10.20
0470	2" x 12"		130	.123		1.63	5.65		7.28	10.50
0480	Stair treads, 1" x 4"		140	.114		1.96	5.25		7.21	10.25
0490	2" x 4"		140	.114		.50	5.25		5.75	8.65
0500	2" x 6"		160	.100		.75	4.59		5.34	7.95
0510	5/4" x 6"		160	.100		.95	4.59		5.54	8.15
0520	Turned handrail post, 4" x 4"		64	.250	Ea.	31	11.45		42.45	51.50
0530	Lattice panel, 4' x 8', 1/2"		1600	.010	S.F.	.80	.46		1.26	1.59
0535	3/4"		1600	.010	"	1.20	.46		1.66	2.03
0540	Cedar, posts or columns, 4" x 4"		390	.041	L.F.	3.80	1.88		5.68	7.10
0550	4" x 6"		275	.058		5.90	2.67		8.57	10.55
0560	4" x 8"		220	.073		10	3.33		13.33	16.15
0800	Decking, 1" x 4"		550	.029		1.81	1.33		3.14	4.05
0810	2" x 4"		600	.027		3.63	1.22		4.85	5.90
0820	2" x 6"		640	.025		6.60	1.15		7.75	9
0830	5/4" x 6"		640	.025		4.45	1.15		5.60	6.65
0840	Railings and trim, 1" x 4"		600	.027		1.81	1.22		3.03	3.88
0860	2" x 4"		600	.027		3.63	1.22		4.85	5.90
0870	2" x 6"		600	.027		6.60	1.22		7.82	9.15
0920	Stair treads, 1" x 4"		140	.114		1.81	5.25		7.06	10.10
0930	2" x 4"		140	.114		3.63	5.25		8.88	12.10
0940	2" x 6"		160	.100		6.60	4.59		11.19	14.35
0950	5/4" x 6"		160	.100		4.45	4.59		9.04	12
0980	Redwood, posts or columns, 4" x 4"		390	.041		6.45	1.88		8.33	9.95
0990	4" x 6"		275	.058		11.20	2.67		13.87	16.40
1000	4" x 8"		220	.073		20.50	3.33		23.83	27.50
1240	Redwood decking, 1" x 4"	1 Carp	275	.029	S.F.	3.97	1.33		5.30	6.45
1260	2" x 6"		340	.024		7.50	1.08		8.58	9.90
1270	5/4" x 6"		320	.025		4.77	1.15		5.92	7
1280	Railings and trim, 1" x 4"	2 Corp	600	.027	L.F.	1.17	1.22		2.39	3.18
1310	2" x 6"		600	.027		7.50	1.22		8.72	10.15
1420	Alternative decking, wood/plastic composite, 5/4" x 6"	G	640	.025		3.04	1.15		4.19	5.10
1440	1" x 4" square edge fir		550	.029		1.97	1.33		3.30	4.23
1450	1" x 4" tongue and groove fir		450	.036		1.31	1.63		2.94	3.96
1460	1" x 4" mahogany		550	.029		1.81	1.33		3.14	4.05
1462	5/4" x 6" PVC		550	.029		3.62	1.33		4.95	6.05
1465	Framing, porch or deck, old deck fastening, screws, add	1 Carp	240	.033	S.F.		1.53		1.53	2.36
1470	Accessories, joist hangers, 2" x 4"		160	.050	Ea.	.73	2.29		3.02	4.34
1480	2" x 6" through 2" x 12"		150	.053		1.39	2.45		3.84	5.30
1530	Post footing, incl excav, backfill, tube form & concrete, 4' deep, 8" dia	F-7	12	2.667		11.60	110		121.60	183
1540	10" diameter		11	2.909		16.90	120		136.90	204
1550	12" diameter		10	3.200		22.50	132		154.50	229

06 11 10.30 Roof Framing

0010	ROOF FRAMING									
5250	Composite rafter, 9-1/2" deep	2 Corp	575	.028	L.F.	1.72	1.28		3	3.87
5260	11-1/2" deep		575	.028	"	1.95	1.28		3.23	4.12

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.30 Roof Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
6070	Fascia boards, 2" x 8"	2 Carp	.30	53.333	M.B.F.	645	2,450		3,095	4,475
6080	2" x 10"		.30	53.333		680	2,450		3,130	4,525
7000	Rafters, to 4 in 12 pitch, 2" x 6"		1	16		570	735		1,305	1,750
7060	2" x 8"		1.26	12.698		645	580		1,225	1,600
7300	Hip and valley rafters, 2" x 6"		.76	21.053		570	965		1,535	2,125
7360	2" x 8"		.96	16.667		645	765		1,410	1,875
7540	Hip and valley jacks, 2" x 6"		.60	26.667		570	1,225		1,795	2,500
7600	2" x 8"		.65	24.615		645	1,125		1,770	2,450
7780	For slopes steeper than 4 in 12, add						30%			
7790	For dormers or complex roofs, add						50%			
7800	Rafter tie, 1" x 4", #3	2 Carp	.27	59.259	M.B.F.	1,400	2,725		4,125	5,750
7820	Ridge board, #2 or better, 1" x 6"		.30	53.333		1,600	2,450		4,050	5,550
7840	1" x 8"		.37	43.243		1,800	1,975		3,775	5,025
7860	1" x 10"		.42	38.095		1,875	1,750		3,625	4,750
7880	2" x 6"		.50	32		570	1,475		2,045	2,900
7900	2" x 8"		.60	26.667		645	1,225		1,870	2,575
7920	2" x 10"		.66	24.242		680	1,100		1,780	2,475
7940	Raaf cants, split, 4" x 4"		.86	18.605		1,275	855		2,130	2,725
7960	6" x 6"		1.80	8.889		1,575	410		1,985	2,375
7980	Raaf curbs, untreated, 2" x 6"		.52	30.769		570	1,400		1,970	2,800
8000	2" x 12"		.80	20		770	915		1,685	2,275

06 11 10.32 Sill and Ledger Framing

0010	SILL AND LEDGER FRAMING									
4482	Ledgers, nailed, 2" x 4"	2 Carp	.50	32	M.B.F.	570	1,475		2,045	2,900
4484	2" x 6"		.60	26.667		570	1,225		1,795	2,500
4486	Baltes, not including balts, 3" x 8"		.65	24.615		1,275	1,125		2,400	3,150
4488	3" x 12"		.70	22.857		1,275	1,050		2,325	3,025
4490	Mud sills, redwood, construction grade, 2" x 4"		.59	27.119		3,400	1,250		4,650	5,650
4492	2" x 6"		.78	20.513		3,400	940		4,340	5,200
4500	Sills, 2" x 4"		.40	40		560	1,825		2,385	3,450
4520	2" x 6"		.55	29.091		560	1,325		1,885	2,675
4540	2" x 8"		.67	23.881		635	1,100		1,735	2,400
4600	Treated, 2" x 4"		.36	44.444		725	2,050		2,775	3,950
4620	2" x 6"		.50	32		750	1,475		2,225	3,100
4640	2" x 8"		.60	26.667		750	1,225		1,975	2,700
4700	4" x 4"		.60	26.667		885	1,225		2,110	2,850
4720	4" x 6"		.70	22.857		855	1,050		1,905	2,575
4740	4" x 8"		.80	20		1,125	915		2,040	2,650
4760	4" x 10"		.87	18.391		1,400	845		2,245	2,825

06 11 10.34 Sleepers

0010	SLEEPERS									
0300	On concrete, treated, 1" x 2"	2 Carp	.39	41.026	M.B.F.	1,600	1,875		3,475	4,675
0320	1" x 3"		.50	32		1,800	1,475		3,275	4,275
0340	2" x 4"		.99	16.162		860	740		1,600	2,100
0360	2" x 6"		1.30	12.308		885	565		1,450	1,850

06 11 10.36 Soffit and Canopy Framing

0010	SOFFIT AND CANOPY FRAMING									
1300	Canopy or soffit framing, 1" x 4"	2 Carp	.30	53.333	M.B.F.	1,400	2,450		3,850	5,325
1340	1" x 8"		.50	32		1,800	1,475		3,275	4,250
1360	2" x 4"		.41	39.024		570	1,800		2,370	3,375
1400	2" x 8"		.67	23.881		645	1,100		1,745	2,400
1420	3" x 4"		.50	32		1,075	1,475		2,550	3,450

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.36 Soffit and Canopy Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
1460	3" x 8"	2 Carp	.60	26.667	M.B.F.	1,275	1,225		2,500	3,275

06 11 10.38 Treated Lumber Framing Material

0010	TREATED LUMBER FRAMING MATERIAL									
0100	2" x 4"				M.B.F.	725			725	800
0110	2" x 6"					750			750	825
0120	2" x 8"					750			750	825
0130	2" x 10"					785			785	865
0140	2" x 12"					990			990	1,075
0200	4" x 4"					885			885	975
0210	4" x 6"					855			855	940
0220	4" x 8"					1,125			1,125	1,225

06 11 10.40 Wall Framing

0010	WALL FRAMING		R061110-30							
5860	Headers over openings, 2" x 6"	2 Corp	.36	44.444	M.B.F.	570	2,050		2,620	3,775
5865	2" x 6", pneumatic nailed		.43	37.209		575	1,700		2,275	3,250
5880	2" x 8"		.45	35.556		645	1,625		2,270	3,225
5885	2" x 8", pneumatic nailed		.54	29.630		650	1,350		2,000	2,825
5900	2" x 10"		.53	30.189		680	1,375		2,055	2,875
5905	2" x 10", pneumatic nailed		.67	23.881		685	1,100		1,785	2,450
5920	2" x 12"		.60	26.667		770	1,225		1,995	2,725
5925	2" x 12", pneumatic nailed		.72	22.222		775	1,025		1,800	2,425
5940	4" x 12"		.76	21.053		1,275	965		2,240	2,900
5945	4" x 12", pneumatic nailed		.92	17.391		1,300	795		2,095	2,650
5960	6" x 12"		.84	19.048		1,600	875		2,475	3,100
5965	6" x 12", pneumatic nailed		1.01	15.873		1,600	730		2,330	2,875
6000	Plates, untreated, 2" x 3"		.43	37.209		745	1,700		2,445	3,450
6005	2" x 3", pneumatic nailed		.52	30.769		750	1,400		2,150	3,000
6020	2" x 4"		.53	30.189		570	1,375		1,945	2,750
6025	2" x 4", pneumatic nailed		.67	23.881		575	1,100		1,675	2,325
6040	2" x 6"		.75	21.333		570	980		1,550	2,125
6045	2" x 6", pneumatic nailed		.90	17.778		575	815		1,390	1,875
6120	Studs, 8' high wall, 2" x 3"		.60	26.667		745	1,225		1,970	2,700
6125	2" x 3", pneumatic nailed		.72	22.222		750	1,025		1,775	2,400
6140	2" x 4"		.92	17.391		570	795		1,365	1,850
6145	2" x 4", pneumatic nailed		1.10	14.493		575	665		1,240	1,650
6160	2" x 6"		1	16		570	735		1,305	1,750
6165	2" x 6", pneumatic nailed		1.20	13.333		575	610		1,185	1,575
6180	3" x 4"		.80	20		1,075	915		1,990	2,600
6185	3" x 4", pneumatic nailed		.96	16.667		1,075	765		1,840	2,350
8200	For 12' high walls, deduct						5%			
8220	For stub wall, 6' high, add						20%			
8240	3' high, add						40%			
8250	For second story & above, add						5%			
8300	For dormer & gable, add						15%			

06 11 10.42 Furring

0010	FURRING									
0012	Wood strips, 1" x 2", on walls, on wood	1 Carp	550	.015	L.F.	.24	.67		.91	1.29
0015	On wood, pneumatic nailed		710	.011		.24	.52		.76	1.06
0300	On masonry		495	.016		.26	.74		1	1.43
0400	On concrete		260	.031		.26	1.41		1.67	2.47
0600	1" x 3", on walls, on wood		550	.015		.38	.67		1.05	1.45
0605	On wood, pneumatic nailed		710	.011		.39	.52		.91	1.22

06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.42 Furring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0700	On masonry	1 Corp	495	.016	L.F.	.42	.74		1.16	1.60
0800	On concrete		260	.031		.42	1.41		1.83	2.64
0850	On ceilings, on wood		350	.023		.38	1.05		1.43	2.04
0855	On wood, pneumatic nailed		450	.018		.39	.82		1.21	1.68
0900	On masonry		320	.025		.42	1.15		1.57	2.23
0950	On concrete	▼	210	.038	▼	.42	1.75		2.17	3.16
06 11 10.44 Grounds										
0010	GROUNDS									
0020	For cosework, 1" x 2" wood strips, on wood	1 Corp	330	.024	L.F.	.24	1.11		1.35	1.98
0100	On masonry		285	.028		.26	1.29		1.55	2.28
0200	On concrete		250	.032		.26	1.47		1.73	2.55
0400	For plaster, 3/4" deep, on wood		450	.018		.24	.82		1.06	1.52
0500	On masonry		225	.036		.26	1.63		1.89	2.81
0600	On concrete		175	.046		.26	2.10		2.36	3.52
0700	On metal loth	▼	200	.040	▼	.26	1.83		2.09	3.12

06 12 Structural Panels

06 12 10 – Structural Insulated Panels

06 12 10.10 OSB Faced Panels

0010	OSB FACED PANELS										
0100	Structural insul. panels, 7/16" OSB both faces, EPS insul, 3-5/8" T	G	F-3	2075	.019	S.F.	3.06	.90	.32	4.28	5.10
0110	5-5/8" thick	G		1725	.023		3.43	1.08	.38	4.89	5.85
0120	7-3/8" thick	G		1425	.028		3.73	1.31	.47	5.51	6.65
0130	9-3/8" thick	G		1125	.036		4.08	1.66	.59	6.33	7.70
0140	7/16" OSB one face, EPS insul, 3-5/8" thick	G		2175	.018		3.25	.86	.30	4.41	5.25
0150	5-5/8" thick	G		1825	.022		3.72	1.02	.36	5.10	6.05
0160	7-3/8" thick	G		1525	.026		4.15	1.23	.43	5.81	6.95
0170	9-3/8" thick	G		1225	.033		4.62	1.53	.54	6.69	8.05
0190	7/16" OSB - 1/2" GWB faces , EPS insul, 3-5/8" T	G		2075	.019		3.22	.90	.32	4.44	5.30
0200	5-5/8" thick	G		1725	.023		3.69	1.08	.38	5.15	6.15
0210	7-3/8" thick	G		1425	.028		4.11	1.31	.47	5.89	7.05
0220	9-3/8" thick	G		1125	.036		4.82	1.66	.59	7.07	8.50
0240	7/16" OSB - 1/2" MRGWB faces , EPS insul, 3-5/8" T	G		2075	.019		3.22	.90	.32	4.44	5.30
0250	5-5/8" thick	G		1725	.023		3.69	1.08	.38	5.15	6.15
0260	7-3/8" thick	G		1425	.028		4.11	1.31	.47	5.89	7.05
0270	9-3/8" thick	G		1125	.036		4.82	1.66	.59	7.07	8.50
0300	For 1/2" GWB added to OSB skin, odd	G					.68			.68	.75
0310	For 1/2" MRGWB added to OSB skin, odd	G					.68			.68	.75
0320	For one T1-11 skin, odd to OSB-OSB	G					1.55			1.55	1.71
0330	For one 19/32" CDX skin, odd to OSB-OSB	G					.79			.79	.87
0500	Structural insulated panel, 7/16" OSB both sides, strow core										
0510	4-3/8" T, wolls (w/sill, splines, plates)	G	F-6	2400	.017	S.F.	7.40	.72	.28	8.40	9.50
0520	Floors (w/splines)	G		2400	.017		7.40	.72	.28	8.40	9.50
0530	Roof (w/splines)	G		2400	.017		7.40	.72	.28	8.40	9.50
0550	7-7/8" T, wolls (w/sill, splines, plates)	G		2400	.017		11.20	.72	.28	12.20	13.70
0560	Floors (w/splines)	G		2400	.017		11.20	.72	.28	12.20	13.70
0570	Roof (w/splines)	G		2400	.017		11.20	.72	.28	12.20	13.70

06 12 Structural Panels

06 12 19 – Composite Shearwall Panels

06 12 19.10 Steel and Wood Composite Shearwall Panels		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	STEEL & WOOD COMPOSITE SHEARWALL PANELS									
0020	Anch bolts, 36" long (must be placed in wet concrete)	1 Corp	150	.053	Ea.	35	2.45		37.45	42.50
0030	On concrete, 2 x 4 & 2 x 6 walls, 7' - 10' high, 360 lb. shear, 12" wide	2 Corp	8	2		465	91.50		556.50	650
0040	715 lb. shear, 15" wide		8	2		560	91.50		651.50	755
0050	1860 lb. shear, 18" wide		8	2		580	91.50		671.50	775
0060	2780 lb. shear, 21" wide		8	2		685	91.50		776.50	895
0070	3790 lb. shear, 24" wide		8	2		790	91.50		881.50	1,000
0080	2 x 6 walls, 11' to 13' high, 1180 lb. shear, 18" wide		6	2.667		705	122		827	965
0090	1555 lb. shear, 21" wide		6	2.667		890	122		1,012	1,175
0100	2280 lb. shear, 24" wide		6	2.667		995	122		1,117	1,300
0110	For installing above an wood floor frame, odd									
0120	Coupler nuts, threaded rods, bolts, shear transfer plate kit	1 Corp	16	.500	Eo.	70	23		93	113
0130	Framing anchors, angle (2 required)	"	96	.083	"	2.61	3.82		6.43	8.75
0140	For blocking see Section 06 11 10.02									
0150	For installing above, first floor to second floor, wood floor frame, odd									
0160	Add stock option to first floor wall panel				Eo.	77			77	84.50
0170	Threaded rods, bolts, shear transfer plate kit	1 Corp	16	.500		84	23		107	128
0180	Framing anchors, angle (2 required)	"	96	.083		2.61	3.82		6.43	8.75
0190	For blocking see 06 11 10.02									
0200	For installing stacked panels, bollean framing									
0210	Add stock option to first floor wall panel				Eo.	77			77	84.50
0220	Threaded rods, bolts kit	1 Corp	16	.500	"	49	23		72	89.50

06 13 Heavy Timber Construction

06 13 23 – Heavy Timber Framing

06 13 23.10 Heavy Framing

0010	HEAVY FRAMING									
0020	Beams, single 6" x 10"	2 Corp	1.10	14.545	M.B.F.	1,600	665		2,265	2,775
0100	Single 8" x 16"		1.20	13.333		2,000	610		2,610	3,150
0200	Built from 2" lumber, multiple 2" x 14"		.90	17.778		760	815		1,575	2,100
0210	Built from 3" lumber, multiple 3" x 6"		.70	22.857		930	1,050		1,980	2,650
0220	Multiple 3" x 8"		.80	20		1,275	915		2,190	2,825
0230	Multiple 3" x 10"		.90	17.778		1,275	815		2,090	2,650
0240	Multiple 3" x 12"		1	16		1,275	735		2,010	2,525
0250	Built from 4" lumber, multiple 4" x 6"		.80	20		1,300	915		2,215	2,850
0260	Multiple 4" x 8"		.90	17.778		1,300	815		2,115	2,675
0270	Multiple 4" x 10"		1	16		1,275	735		2,010	2,525
0280	Multiple 4" x 12"		1.10	14.545		1,275	665		1,940	2,425
0290	Columns, structural grade, 1500f, 4" x 4"		.60	26.667		1,275	1,225		2,500	3,275
0300	6" x 6"		.65	24.615		1,400	1,125		2,525	3,300
0400	8" x 8"		.70	22.857		1,350	1,050		2,400	3,100
0500	10" x 10"		.75	21.333		1,450	980		2,430	3,100
0600	12" x 12"		.80	20		1,525	915		2,440	3,100
0800	Floor planks, 2" thick, T & G, 2" x 6"		1.05	15.238		1,600	700		2,300	2,825
0900	2" x 10"		1.10	14.545		1,600	665		2,265	2,775
1100	3" thick, 3" x 6"		1.05	15.238		1,600	700		2,300	2,825
1200	3" x 10"		1.10	14.545		1,600	665		2,265	2,775
1400	Girders, structural grade, 12" x 12"		.80	20		1,525	915		2,440	3,100
1500	10" x 16"		1	16		2,400	735		3,135	3,775
2300	Roof purlins, 4" thick, structural grade		1.05	15.238		1,300	700		2,000	2,500

06 15 Wood Decking

06 15 16 – Wood Roof Decking

06 15 16.10 Solid Wood Roof Decking

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SOLID WOOD ROOF DECKING									
0350	Cedar planks, 2" thick	2 Carp	350	.046	S.F.	5.35	2.10		7.45	9.10
0400	3" thick		320	.050		8	2.29		10.29	12.35
0500	4" thick		250	.064		10.65	2.93		13.58	16.30
0550	6" thick		200	.080		16	3.67		19.67	23.50
0650	Douglas fir, 2" thick		350	.046		2.69	2.10		4.79	6.20
0700	3" thick		320	.050		4.04	2.29		6.33	8
0800	4" thick		250	.064		5.40	2.93		8.33	10.45
0850	6" thick		200	.080		8.05	3.67		11.72	14.55
0950	Hemlock, 2" thick		350	.046		2.74	2.10		4.84	6.25
1000	3" thick		320	.050		4.11	2.29		6.40	8.05
1100	4" thick		250	.064		5.50	2.93		8.43	10.55
1150	6" thick		200	.080		8.20	3.67		11.87	14.70
1250	Western white spruce, 2" thick		350	.046		1.75	2.10		3.85	5.15
1300	3" thick		320	.050		2.62	2.29		4.91	6.45
1400	4" thick		250	.064		3.50	2.93		6.43	8.40
1450	6" thick		200	.080		5.25	3.67		8.92	11.40

06 15 23 – Laminated Wood Decking

06 15 23.10 Laminated Roof Deck

0010	LAMINATED ROOF DECK									
0020	Pine or hemlock, 3" thick	2 Carp	425	.038	S.F.	6.30	1.73		8.03	9.60
0100	4" thick		325	.049		8.70	2.26		10.96	13.05
0300	Cedar, 3" thick		425	.038		6.85	1.73		8.58	10.20
0400	4" thick		325	.049		9.15	2.26		11.41	13.60
0600	Fir, 3" thick		425	.038		6.30	1.73		8.03	9.60
0700	4" thick		325	.049		8.70	2.26		10.96	13.05

06 16 Sheathing

06 16 13 – Insulating Sheathing

06 16 13.10 Insulating Sheathing

0010	INSULATING SHEATHING									
0020	Expanded polystyrene, 1#/C.F. density, 3/4" thick R2.89	 2 Carp	1400	.011	S.F.	.32	.52		.84	1.17
0030	1" thick R3.85		1300	.012		.38	.56		.94	1.29
0040	2" thick R7.69		1200	.013		.62	.61		1.23	1.63
0050	Extruded polystyrene, 15 PSI compressive strength, 1" thick, R5		1300	.012		.67	.56		1.23	1.61
0060	2" thick, R10		1200	.013		.83	.61		1.44	1.86
0070	Polyisocyanurate, 2#/C.F. density, 3/4" thick		1400	.011		.58	.52		1.10	1.45
0080	1" thick		1300	.012		.64	.56		1.20	1.58
0090	1-1/2" thick		1250	.013		.77	.59		1.36	1.76
0100	2" thick		1200	.013		.93	.61		1.54	1.97

06 16 23 – Subflooring

06 16 23.10 Subfloor

0010	SUBFLOOR									
0011	Plywood, CDX, 1/2" thick	R061636-20 2 Carp	1500	.011	SF Flr.	.60	.49		1.09	1.40
0015	Pneumatic nailed		1860	.009		.60	.39		.99	1.26
0100	5/8" thick		1350	.012		.74	.54		1.28	1.66
0105	Pneumatic nailed		1674	.010		.74	.44		1.18	1.50
0200	3/4" thick		1250	.013		.88	.59		1.47	1.88
0205	Pneumatic nailed		1550	.010		.88	.47		1.35	1.70
0300	1-1/8" thick, 2-4-1 including underlayment		1050	.015		2.23	.70		2.93	3.53

06 16 Sheathing

06 16 23 – Subflooring

06 16 23.10 Subfloor		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs Labar Equipment	Total	Total Incl O&P
0440	With boords, 1" x 6", S4S, loid regular	2 Corp	900	.018	SF Flr.	1.74	.82	2.56	3.18
0450	1" x 8", loid regular		1000	.016		1.90	.73	2.63	3.22
0460	Loid diagonal		850	.019		1.90	.86	2.76	3.42
0500	1" x 10", loid regular		1100	.015		1.95	.67	2.62	3.17
0600	Loid diagonal		900	.018		1.95	.82	2.77	3.40
8990	Subfloor adhesive, 3/8" bead	1 Corp	2300	.003	L.F.	.12	.16	.28	.38

06 16 26 – Underlayment

06 16 26.10 Wood Product Underlayment

0010	WOOD PRODUCT UNDERLAYMENT		R061636-20							
0015	Plywood, underlayment grade, 1/4" thick		2 Corp	1500	.011	S.F.	.84	.49	1.33	1.67
0018	Pneumotic nailed			1860	.009		.84	.39	1.23	1.53
0030	3/8" thick			1500	.011		.93	.49	1.42	1.77
0070	Pneumotic nailed			1860	.009		.93	.39	1.32	1.63
0100	1/2" thick			1450	.011		1.06	.51	1.57	1.95
0105	Pneumotic nailed			1798	.009		1.06	.41	1.47	1.80
0200	5/8" thick			1400	.011		1.18	.52	1.70	2.11
0205	Pneumotic nailed			1736	.009		1.18	.42	1.60	1.95
0300	3/4" thick			1300	.012		1.40	.56	1.96	2.41
0305	Pneumotic nailed			1612	.010		1.40	.46	1.86	2.24
0500	Particle board, 3/8" thick		G	1500	.011		.40	.49	.89	1.19
0505	Pneumotic nailed		G	1860	.009		.40	.39	.79	1.05
0600	1/2" thick		G	1450	.011		.42	.51	.93	1.24
0605	Pneumotic nailed		G	1798	.009		.42	.41	.83	1.09
0800	5/8" thick		G	1400	.011		.52	.52	1.04	1.38
0805	Pneumotic nailed		G	1736	.009		.52	.42	.94	1.22
0900	3/4" thick		G	1300	.012		.62	.56	1.18	1.55
0905	Pneumotic nailed		G	1612	.010		.62	.46	1.08	1.38
0955	Particleboard, 100% recycled straw/wheat, 4' x 8' x 1/4"		G	1450	.011		.29	.51	.80	1.10
0960	4' x 8' x 3/8"		G	1450	.011		.42	.51	.93	1.24
0965	4' x 8' x 1/2"		G	1350	.012		.59	.54	1.13	1.49
0970	4' x 8' x 5/8"		G	1300	.012		.71	.56	1.27	1.65
0975	4' x 8' x 3/4"		G	1250	.013		.81	.59	1.40	1.80
0980	4' x 8' x 1"		G	1150	.014		1.08	.64	1.72	2.17
0985	4' x 8' x 1-1/4"		G	1100	.015		1.24	.67	1.91	2.39
1100	Hardboard, underlayment grade, 4' x 4', .215" thick		G	1500	.011		.57	.49	1.06	1.38

06 16 33 – Wood Board Sheathing

06 16 33.10 Board Sheathing

0009	BOARD SHEATHING									
0010	Roof, 1" x 6" boards, loid horizontal	2 Corp	725	.022	S.F.	1.74	1.01	2.75	3.48	
0020	On steep roof		520	.031		1.74	1.41	3.15	4.10	
0040	On dormers, hips, & volleys		480	.033		1.74	1.53	3.27	4.28	
0050	Loid diagonal		650	.025		1.74	1.13	2.87	3.66	
0070	1" x 8" boards, loid horizontal		875	.018		1.90	.84	2.74	3.38	
0080	On steep roof		635	.025		1.90	1.16	3.06	3.87	
0090	On dormers, hips, & volleys		580	.028		1.95	1.27	3.22	4.09	
0100	Loid diagonal		725	.022		1.90	1.01	2.91	3.65	
0110	Skip sheothing, 1" x 4", 7" OC	1 Corp	1200	.007		.58	.31	.89	1.11	
0120	1" x 6", 9" OC	"	1450	.006		.80	.25	1.05	1.27	
0200	Wolls, 1" x 6" boards, loid regulor	2 Corp	650	.025		1.74	1.13	2.87	3.66	
0210	Loid diagonal		585	.027		1.74	1.25	2.99	3.86	
0220	1" x 8" boards, loid regulor		765	.021		1.90	.96	2.86	3.57	
0230	Loid diagonal		650	.025		1.90	1.13	3.03	3.83	

06 16 Sheathing

06 16 36 – Wood Panel Product Sheathing

06 16 36.10 Sheathing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SHEATHING									
					R061636-20					
0012	Plywood on roofs, CDX									
0030	5/16" thick	2 Carp	1600	.010	S.F.	.55	.46		1.01	1.32
0035	Pneumatic nailed									
					R061110-30	.55	.38		.93	1.19
0050	3/8" thick		1525	.010		.50	.48		.98	1.29
0055	Pneumatic nailed		1860	.009		.50	.39		.89	1.16
0100	1/2" thick		1400	.011		.60	.52		1.12	1.46
0105	Pneumatic nailed		1708	.009		.60	.43		1.03	1.31
0200	5/8" thick		1300	.012		.74	.56		1.30	1.69
0205	Pneumatic nailed		1586	.010		.74	.46		1.20	1.53
0300	3/4" thick		1200	.013		.88	.61		1.49	1.91
0305	Pneumatic nailed		1464	.011		.88	.50		1.38	1.74
0500	Plywood on walls, with exterior CDX, 3/8" thick		1200	.013		.50	.61		1.11	1.49
0505	Pneumatic nailed		1488	.011		.50	.49		.99	1.31
0600	1/2" thick		1125	.014		.60	.65		1.25	1.66
0605	Pneumatic nailed		1395	.011		.60	.53		1.13	1.46
0700	5/8" thick		1050	.015		.74	.70		1.44	1.90
0705	Pneumatic nailed		1302	.012		.74	.56		1.30	1.69
0800	3/4" thick		975	.016		.88	.75		1.63	2.13
0805	Pneumatic nailed		1209	.013		.88	.61		1.49	1.91
1000	For shear wall construction, add						20%			
1200	For structural 1 exterior plywood, add				S.F.	10%				
3000	Wood fiber, regular, no vapor barrier, 1/2" thick	2 Carp	1200	.013		.60	.61		1.21	1.60
3100	5/8" thick		1200	.013		.76	.61		1.37	1.78
3300	No vapor barrier, in colors, 1/2" thick		1200	.013		.73	.61		1.34	1.74
3400	5/8" thick		1200	.013		.77	.61		1.38	1.79
3600	With vapor barrier one side, white, 1/2" thick		1200	.013		.59	.61		1.20	1.59
3700	Vapor barrier 2 sides, 1/2" thick		1200	.013		.82	.61		1.43	1.84
3800	Asphalt impregnated, 25/32" thick		1200	.013		.32	.61		.93	1.29
3850	Intermediate, 1/2" thick		1200	.013		.24	.61		.85	1.20
4500	Oriented strand board, on roof, 7/16" thick		1460	.011		.50	.50		1	1.33
4505	Pneumatic nailed		1780	.009		.50	.41		.91	1.19
4550	1/2" thick		1400	.011		.50	.52		1.02	1.36
4555	Pneumatic nailed		1736	.009		.50	.42		.92	1.20
4600	5/8" thick		1300	.012		.69	.56		1.25	1.63
4605	Pneumatic nailed		1586	.010		.69	.46		1.15	1.47
4610	On walls, 7/16" thick		1200	.013		.50	.61		1.11	1.49
4615	Pneumatic nailed		1488	.011		.50	.49		.99	1.31
4620	1/2" thick		1195	.013		.50	.61		1.11	1.50
4625	Pneumatic nailed		1325	.012		.50	.55		1.05	1.40
4630	5/8" thick		1050	.015		.69	.70		1.39	1.84
4635	Pneumatic nailed		1302	.012		.69	.56		1.25	1.63
4700	Oriented strand board, factory laminated W.R. barrier, on roof, 1/2" thick		1400	.011		.62	.52		1.14	1.49
4705	Pneumatic nailed		1736	.009		.62	.42		1.04	1.33
4720	5/8" thick		1300	.012		.77	.56		1.33	1.72
4725	Pneumatic nailed		1586	.010		.77	.46		1.23	1.56
4730	5/8" thick, T&G		1150	.014		.78	.64		1.42	1.84
4735	Pneumatic nailed, T&G		1400	.011		.78	.52		1.30	1.67
4740	On walls, 7/16" thick		1200	.013		.56	.61		1.17	1.56
4745	Pneumatic nailed		1488	.011		.56	.49		1.05	1.38
4750	1/2" thick		1195	.013		.62	.61		1.23	1.63
4755	Pneumatic nailed		1325	.012		.62	.55		1.17	1.53

06 16 Sheathing

06 16 36 – Wood Panel Product Sheathing

06 16 36.10 Sheathing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4800	Joint sealant tape, 3-1/2"	2 Carp	7600	.002	L.F.	.28	.10		.38	.46
4810	Joint sealant tape, 6"	↓	7600	.002	"	.44	.10		.54	.63

06 16 43 – Gypsum Sheathing

06 16 43.10 Gypsum Sheathing

0010	GYPSUM SHEATHING									
0020	Gypsum, weatherproof, 1/2" thick	2 Carp	1125	.014	S.F.	.44	.65		1.09	1.49
0040	With embedded glass mats	"	1100	.015	"	.77	.67		1.44	1.88

06 17 Shop-Fabricated Structural Wood

06 17 33 – Wood I-Joists

06 17 33.10 Wood and Composite I-Joists

0010	WOOD AND COMPOSITE I-JOISTS									
0100	Plywood webs, incl. bridging & blocking, panels 24" O.C.									
1200	15' to 24' span, 50 psf live load	F-5	2400	.013	SF Flr.	1.95	.62		2.57	3.09
1300	55 psf live load		2250	.014		2.21	.66		2.87	3.45
1400	24' to 30' span, 45 psf live load	↓	2600	.012		2.61	.57		3.18	3.76
1500	55 psf live load	↓	2400	.013	↓	3.89	.62		4.51	5.25

06 17 53 – Shop-Fabricated Wood Trusses

06 17 53.10 Roof Trusses

0010	ROOF TRUSSES									
0100	Fink (W) or King post type, 2'-0" O.C.									
0200	Metal plate connected, 4 in 12 slope									
0210	24' to 29' span	F-3	3000	.013	SF Flr.	1.71	.62	.22	2.55	3.08
0300	30' to 43' span	↓	3000	.013		2.18	.62	.22	3.02	3.60
0400	44' to 60' span	↓	3000	.013		2.36	.62	.22	3.20	3.79
0700	Glued and nailed, add				↓	50%				

06 18 Glued-Laminated Construction

06 18 13 – Glued-Laminated Beams

06 18 13.20 Laminated Framing

0010	LAMINATED FRAMING									
0020	30 lb., short term live load, 15 lb. dead load									
0200	Straight roof beams, 20' clear span, beams 8' O.C.	F-3	2560	.016	SF Flr.	1.91	.73	.26	2.90	3.50
0300	Beams 16' O.C.	↓	3200	.013		1.38	.58	.21	2.17	2.65
0500	40' clear span, beams 8' O.C.		3200	.013		3.65	.58	.21	4.44	5.15
0600	Beams 16' O.C.	↓	3840	.010		2.99	.49	.17	3.65	4.23
0800	60' clear span, beams 8' O.C.	F-4	2880	.017		6.30	.77	.39	7.46	8.50
0900	Beams 16' O.C.	"	3840	.013		4.68	.58	.30	5.56	6.35
1100	Tudor arches, 30' to 40' clear span, frames 8' O.C.	F-3	1680	.024		8.20	1.11	.39	9.70	11.15
1200	Frames 16' O.C.	"	2240	.018		6.40	.83	.30	7.53	8.65
1400	50' to 60' clear span, frames 8' O.C.	F-4	2200	.022		8.85	1.01	.52	10.38	11.80
1500	Frames 16' O.C.		2640	.018		7.50	.84	.43	8.77	10
1700	Radial arches, 60' clear span, frames 8' O.C.		1920	.025		8.25	1.16	.59	10	11.50
1800	Frames 16' O.C.		2880	.017		6.35	.77	.39	7.51	8.60
2000	100' clear span, frames 8' O.C.		1600	.030		8.55	1.39	.71	10.65	12.30
2100	Frames 16' O.C.		2400	.020		7.50	.92	.47	8.89	10.20
2300	120' clear span, frames 8' O.C.		1440	.033		11.35	1.54	.79	13.68	15.75
2400	Frames 16' O.C.	↓	1920	.025	↓	10.35	1.16	.59	12.10	13.80

06 18 Glued-Laminated Construction

06 18 13 – Glued-Laminated Beams

06 18 13.20 Laminated Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2600	Bowstring trusses, 20' O.C., 40' clear span	F-3	2400	.017	SF Flr.	5.10	.78	.28	6.16	7.15
2700	60' clear span	F-4	3600	.013		4.60	.62	.32	5.54	6.35
2800	100' clear span		4000	.012		6.50	.55	.28	7.33	8.30
2900	120' clear span	▼	3600	.013		7	.62	.32	7.94	9
3000	For less than 1000 B.F., add					20%				
3050	For over 5000 B.F., deduct					10%				
3100	For premium appearance, add to S.F. prices					5%				
3300	For industrial type, deduct					15%				
3500	For stain and varnish, add					5%				
3900	For 3/4" laminations, add to straight					25%				
4100	Add to curved				▼	15%				
4300	Alternate pricing method: (use nominal footage of									
4310	components). Straight beams, camber less than 6"	F-3	3.50	11.429	M.B.F.	2,825	535	189	3,549	4,150
4400	Columns, including hardware		2	20		3,050	935	330	4,315	5,150
4600	Curved members, radius over 32'		2.50	16		3,125	750	265	4,140	4,875
4700	Radius 10' to 32'	▼	3	13.333		3,075	625	221	3,921	4,600
4900	For complicated shapes, add maximum					100%				
5100	For pressure treating, add to straight					35%				
5200	Add to curved				▼	45%				
6000	Laminated veneer members, southern pine or western species									
6050	1-3/4" wide x 5-1/2" deep	2 Carp	480	.033	L.F.	2.94	1.53		4.47	5.60
6100	9-1/2" deep		480	.033		4.35	1.53		5.88	7.15
6150	14" deep		450	.036		6.75	1.63		8.38	9.90
6200	18" deep	▼	450	.036	▼	9.50	1.63		11.13	12.95
6300	Parallel strand members, southern pine or western species									
6350	1-3/4" wide x 9-1/4" deep	2 Carp	480	.033	L.F.	4.35	1.53		5.88	7.15
6400	11-1/4" deep		450	.036		4.93	1.63		6.56	7.90
6450	14" deep		400	.040		6.75	1.83		8.58	10.25
6500	3-1/2" wide x 9-1/4" deep		480	.033		15.15	1.53		16.68	19
6550	11-1/4" deep		450	.036		18.10	1.63		19.73	22.50
6600	14" deep		400	.040		22.50	1.83		24.33	27.50
6650	7" wide x 9-1/4" deep		450	.036		30.50	1.63		32.13	36
6700	11-1/4" deep		420	.038		38	1.75		39.75	44
6750	14" deep	▼	400	.040	▼	44.50	1.83		46.33	52
8000	Straight beams									
8102	20' span									
8104	3-1/8" x 9"	F-3	30	1.333	Ea.	133	62.50	22	217.50	267
8106	X 10-1/2"		30	1.333		155	62.50	22	239.50	291
8108	X 12"		30	1.333		177	62.50	22	261.50	315
8110	X 13-1/2"		30	1.333		199	62.50	22	283.50	340
8112	X 15"		29	1.379		221	64.50	23	308.50	365
8114	5-1/8" x 10-1/2"		30	1.333		254	62.50	22	338.50	400
8116	X 12"		30	1.333		290	62.50	22	374.50	440
8118	X 13-1/2"		30	1.333		325	62.50	22	409.50	480
8120	X 15"		29	1.379		365	64.50	23	452.50	525
8122	X 16-1/2"		29	1.379		400	64.50	23	487.50	565
8124	X 18"		29	1.379		435	64.50	23	522.50	605
8126	X 19-1/2"		29	1.379		470	64.50	23	557.50	645
8128	X 21"		28	1.429		510	67	23.50	600.50	690
8130	X 22-1/2"		28	1.429		545	67	23.50	635.50	730
8132	X 24"		28	1.429		580	67	23.50	670.50	770
8134	6-3/4" x 12"		29	1.379		380	64.50	23	467.50	545
8136	X 13-1/2"	▼	29	1.379	▼	430	64.50	23	517.50	600

06 18 Glued-Laminated Construction

06 18 13 – Glued-Laminated Beams

06 18 13.20 Laminated Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8138	X 15"	F-3	29	1.379	Eq.	480	64.50	23	567.50	650
8140	X 16-1/2"		28	1.429		525	67	23.50	615.50	710
8142	X 18"		28	1.429		575	67	23.50	665.50	760
8144	X 19-1/2"		28	1.429		620	67	23.50	710.50	815
8146	X 21"		27	1.481		670	69	24.50	763.50	870
8148	X 22-1/2"		27	1.481		715	69	24.50	808.50	925
8150	X 24"		27	1.481		765	69	24.50	858.50	975
8152	X 25-1/2"		27	1.481		810	69	24.50	903.50	1,025
8154	X 27"		26	1.538		860	72	25.50	957.50	1,075
8156	X 28-1/2"		26	1.538		910	72	25.50	1,007.50	1,150
8158	X 30"		26	1.538		955	72	25.50	1,052.50	1,200
8200	30' span									
8250	3-1/8" x 9"	F-3	30	1.333	Eq.	199	62.50	22	283.50	340
8252	X 10-1/2"		30	1.333		232	62.50	22	316.50	375
8254	X 12"		30	1.333		266	62.50	22	350.50	415
8256	X 13-1/2"		30	1.333		299	62.50	22	383.50	450
8258	X 15"		29	1.379		330	64.50	23	417.50	490
8260	5-1/8" x 10-1/2"		30	1.333		380	62.50	22	464.50	540
8262	X 12"		30	1.333		435	62.50	22	519.50	600
8264	X 13-1/2"		30	1.333		490	62.50	22	574.50	660
8266	X 15"		29	1.379		545	64.50	23	632.50	725
8268	X 16-1/2"		29	1.379		600	64.50	23	687.50	785
8270	X 18"		29	1.379		655	64.50	23	742.50	845
8272	X 19-1/2"		29	1.379		710	64.50	23	797.50	905
8274	X 21"		28	1.429		760	67	23.50	850.50	970
8276	X 22-1/2"		28	1.429		815	67	23.50	905.50	1,025
8278	X 24"		28	1.429		870	67	23.50	960.50	1,100
8280	6-3/4" x 12"		29	1.379		575	64.50	23	662.50	755
8282	X 13-1/2"		29	1.379		645	64.50	23	732.50	835
8284	X 15"		29	1.379		715	64.50	23	802.50	915
8286	X 16-1/2"		28	1.429		790	67	23.50	880.50	995
8288	X 18"		28	1.429		860	67	23.50	950.50	1,075
8290	X 19-1/2"		28	1.429		930	67	23.50	1,020.50	1,150
8292	X 21"		27	1.481		1,000	69	24.50	1,093.50	1,225
8294	X 22-1/2"		27	1.481		1,075	69	24.50	1,168.50	1,300
8296	X 24"		27	1.481		1,150	69	24.50	1,243.50	1,375
8298	X 25-1/2"		27	1.481		1,225	69	24.50	1,318.50	1,475
8300	X 27"		26	1.538		1,300	72	25.50	1,397.50	1,575
8302	X 28-1/2"		26	1.538		1,350	72	25.50	1,447.50	1,650
8304	X 30"		26	1.538		1,425	72	25.50	1,522.50	1,725
8400	40' span									
8402	3-1/8" x 9"	F-3	30	1.333	Eq.	266	62.50	22	350.50	415
8404	X 10-1/2"		30	1.333		310	62.50	22	394.50	460
8406	X 12"		30	1.333		355	62.50	22	439.50	510
8408	X 13-1/2"		30	1.333		400	62.50	22	484.50	560
8410	X 15"		29	1.379		445	64.50	23	532.50	610
8412	5-1/8" x 10-1/2"		30	1.333		510	62.50	22	594.50	680
8414	X 12"		30	1.333		580	62.50	22	664.50	760
8416	X 13-1/2"		30	1.333		655	62.50	22	739.50	840
8418	X 15"		29	1.379		725	64.50	23	812.50	925
8420	X 16-1/2"		29	1.379		800	64.50	23	887.50	1,000
8422	X 18"		29	1.379		870	64.50	23	957.50	1,075
8424	X 19-1/2"		29	1.379		945	64.50	23	1,032.50	1,175

06 18 Glued-Laminated Construction

06 18 13 – Glued-Laminated Beams

06 18 13.20 Laminated Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8426	X 21"	F-3	28	1.429	Eo.	1,025	67	23.50	1,115.50	1,250
8428	X 22-1/2"		28	1.429		1,100	67	23.50	1,190.50	1,325
8430	X 24"		28	1.429		1,150	67	23.50	1,240.50	1,400
8432	6-3/4" x 12"		29	1.379		765	64.50	23	852.50	965
8434	X 13-1/2"		29	1.379		860	64.50	23	947.50	1,075
8436	X 15"		29	1.379		955	64.50	23	1,042.50	1,175
8438	X 16-1/2"		28	1.429		1,050	67	23.50	1,140.50	1,275
8440	X 18"		28	1.429		1,150	67	23.50	1,240.50	1,375
8442	X 19-1/2"		28	1.429		1,250	67	23.50	1,340.50	1,500
8444	X 21"		27	1.481		1,350	69	24.50	1,443.50	1,600
8446	X 22-1/2"		27	1.481		1,425	69	24.50	1,518.50	1,700
8448	X 24"		27	1.481		1,525	69	24.50	1,618.50	1,800
8450	X 25-1/2"		27	1.481		1,625	69	24.50	1,718.50	1,900
8452	X 27"		26	1.538		1,725	72	25.50	1,822.50	2,050
8454	X 28-1/2"		26	1.538		1,825	72	25.50	1,922.50	2,150
8456	X 30"		26	1.538		1,900	72	25.50	1,997.50	2,250

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.15 Moldings, Base

0010	MOLDINGS, BASE									
5100	Classic profile, 5/8" x 5-1/2", finger jointed ond primed	1 Corp	250	.032	L.F.	1.39	1.47		2.86	3.79
5105	Poplar		240	.033		1.47	1.53		3	3.98
5110	Red ook		220	.036		2.15	1.67		3.82	4.93
5115	Mople		220	.036		3.40	1.67		5.07	6.30
5120	Cherry		220	.036		4.04	1.67		5.71	7
5125	3/4 x 7-1/2", finger jointed ond primed		250	.032		1.76	1.47		3.23	4.19
5130	Poplar		240	.033		2.34	1.53		3.87	4.93
5135	Red ook		220	.036		3.12	1.67		4.79	6
5140	Mople		220	.036		4.52	1.67		6.19	7.55
5145	Cherry		220	.036		5.40	1.67		7.07	8.50
5150	Modern profile, 5/8" x 3-1/2", finger jointed ond primed		250	.032		.93	1.47		2.40	3.28
5155	Poplar		240	.033		.93	1.53		2.46	3.38
5160	Red ook		220	.036		1.47	1.67		3.14	4.19
5165	Mople		220	.036		2.38	1.67		4.05	5.20
5170	Cherry		220	.036		2.57	1.67		4.24	5.40
5175	Ogee profile, 7/16" x 3", finger jointed ond primed		250	.032		.56	1.47		2.03	2.87
5180	Poplar		240	.033		.61	1.53		2.14	3.03
5185	Red ook		220	.036		.82	1.67		2.49	3.47
5200	9/16" x 3-1/2", finger jointed ond primed		250	.032		.62	1.47		2.09	2.94
5205	Pine		240	.033		1.44	1.53		2.97	3.94
5210	Red ook		220	.036		2.32	1.67		3.99	5.10
5215	9/16" x 4-1/2", red ook		220	.036		3.47	1.67		5.14	6.40
5220	5/8" x 3-1/2", finger jointed ond primed		250	.032		.85	1.47		2.32	3.19
5225	Poplar		240	.033		.93	1.53		2.46	3.38
5230	Red ook		220	.036		1.47	1.67		3.14	4.19
5235	Mople		220	.036		2.38	1.67		4.05	5.20
5240	Cherry		220	.036		2.57	1.67		4.24	5.40
5245	5/8" x 4", finger jointed ond primed		250	.032		1.10	1.47		2.57	3.47
5250	Poplar		240	.033		1.20	1.53		2.73	3.68
5255	Red ook		220	.036		1.65	1.67		3.32	4.38

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.15 Moldings, Base		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5260	Mople	1 Corp	220	.036	L.F.	2.66	1.67		4.33	5.50
5265	Cherry		220	.036		2.79	1.67		4.46	5.65
5270	Rectangular profile, oak, 3/8" x 1-1/4"		260	.031		1.25	1.41		2.66	3.56
5275	1/2" x 2-1/2"		255	.031		1.91	1.44		3.35	4.32
5280	1/2" x 3-1/2"		250	.032		2.31	1.47		3.78	4.80
5285	1" x 6"		240	.033		3.64	1.53		5.17	6.35
5290	1" x 8"		240	.033		5.10	1.53		6.63	7.95
5295	Pine, 3/8" x 1-3/4"		260	.031		.62	1.41		2.03	2.86
5300	7/16" x 2-1/2"		255	.031		.90	1.44		2.34	3.21
5305	1" x 6"		240	.033		.88	1.53		2.41	3.33
5310	1" x 8"		240	.033		1.18	1.53		2.71	3.66
5315	Shoe, 1/2" x 3/4", primed		260	.031		.46	1.41		1.87	2.68
5320	Pine		240	.033		.37	1.53		1.90	2.77
5325	Poplar		240	.033		.36	1.53		1.89	2.75
5330	Red oak		220	.036		.47	1.67		2.14	3.09
5335	Maple		220	.036		.66	1.67		2.33	3.29
5340	Cherry		220	.036		.74	1.67		2.41	3.38
5345	11/16" x 1-1/2", pine		240	.033		.80	1.53		2.33	3.24
5350	Caps, 11/16" x 1-3/8", pine		240	.033		.84	1.53		2.37	3.28
5355	3/4" x 1-3/4", finger jointed and primed		260	.031		.67	1.41		2.08	2.92
5360	Poplar		240	.033		.94	1.53		2.47	3.39
5365	Red oak		220	.036		1.08	1.67		2.75	3.76
5370	Maple		220	.036		1.48	1.67		3.15	4.20
5375	Cherry		220	.036		3.12	1.67		4.79	6
5380	Combination base & shoe, 9/16" x 3-1/2" & 1/2" x 3/4", pine		125	.064		1.81	2.93		4.74	6.50
5385	Three piece oak, 6" high		80	.100		5.20	4.59		9.79	12.80
5390	Including 3/4" x 1" base shoe		70	.114		5.50	5.25		10.75	14.15
5395	Flooring cont strip, 3/4" x 3/4", pre-finished pine		260	.031		.47	1.41		1.88	2.70
5400	For pre-finished, stain and clear coat, add					.50			.50	.55
5405	Clear coat only, add					.40			.40	.44

06 22 13.30 Moldings, Casings

0010	MOLDINGS, CASINGS									
0085	Apron, 9/16" x 2-1/2", pine	1 Corp	250	.032	L.F.	1.58	1.47		3.05	4
0090	5/8" x 2-1/2", pine		250	.032		1.64	1.47		3.11	4.06
0110	5/8" x 3-1/2", pine		220	.036		2.45	1.67		4.12	5.25
0300	Band, 11/16" x 1-1/8", pine		270	.030		1	1.36		2.36	3.20
0310	11/16" x 1-1/2", finger jointed and primed		270	.030		.67	1.36		2.03	2.84
0320	Pine		270	.030		1.24	1.36		2.60	3.46
0330	11/16" x 1-3/4", finger jointed and primed		270	.030		.75	1.36		2.11	2.92
0350	Pine		270	.030		1.25	1.36		2.61	3.47
0355	Beoded, 3/4" x 3-1/2", finger jointed and primed		220	.036		1.04	1.67		2.71	3.71
0360	Poplar		220	.036		1.04	1.67		2.71	3.71
0365	Red oak		220	.036		1.47	1.67		3.14	4.19
0370	Maple		220	.036		2.38	1.67		4.05	5.20
0375	Cherry		220	.036		2.88	1.67		4.55	5.75
0380	3/4" x 4", finger jointed and primed		220	.036		1.10	1.67		2.77	3.78
0385	Poplar		220	.036		1.34	1.67		3.01	4.04
0390	Red oak		220	.036		1.80	1.67		3.47	4.55
0395	Maple		220	.036		2.48	1.67		4.15	5.30
0400	Cherry		220	.036		3.13	1.67		4.80	6
0405	3/4" x 5-1/2", finger jointed and primed		200	.040		1.07	1.83		2.90	4.01
0410	Poplar		200	.040		1.80	1.83		3.63	4.81

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.30 Moldings, Casings		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0415	Red oak	1 Corp	200	.040	L.F.	2.53	1.83		4.36	5.60
0420	Maple		200	.040		3.49	1.83		5.32	6.65
0425	Cherry		200	.040		4.02	1.83		5.85	7.25
0430	Classic profile, 3/4" x 2-3/4", finger jointed and primed		250	.032		.73	1.47		2.20	3.06
0435	Poplar		250	.032		.93	1.47		2.40	3.28
0440	Red oak		250	.032		1.30	1.47		2.77	3.69
0445	Maple		250	.032		1.95	1.47		3.42	4.40
0450	Cherry		250	.032		2.21	1.47		3.68	4.69
0455	Fluted, 3/4" x 3-1/2", poplar		220	.036		1.04	1.67		2.71	3.71
0460	Red oak		220	.036		1.47	1.67		3.14	4.19
0465	Maple		220	.036		2.38	1.67		4.05	5.20
0470	Cherry		220	.036		2.88	1.67		4.55	5.75
0475	3/4" x 4", poplar		220	.036		1.34	1.67		3.01	4.04
0480	Red oak		220	.036		1.80	1.67		3.47	4.55
0485	Maple		220	.036		2.48	1.67		4.15	5.30
0490	Cherry		220	.036		3.13	1.67		4.80	6
0495	3/4" x 5-1/2", poplar		200	.040		1.80	1.83		3.63	4.81
0500	Red oak		200	.040		2.53	1.83		4.36	5.60
0505	Maple		200	.040		3.49	1.83		5.32	6.65
0510	Cherry		200	.040		4.02	1.83		5.85	7.25
0515	3/4" x 7-1/2", poplar		190	.042		1.27	1.93		3.20	4.37
0520	Red oak		190	.042		3.50	1.93		5.43	6.85
0525	Maple		190	.042		5.30	1.93		7.23	8.80
0530	Cherry		190	.042		6.30	1.93		8.23	9.95
0535	3/4" x 9-1/2", poplar		180	.044		3.85	2.04		5.89	7.35
0540	Red oak		180	.044		5.85	2.04		7.89	9.60
0545	Maple		180	.044		8.40	2.04		10.44	12.40
0550	Cherry		180	.044		9.15	2.04		11.19	13.20
0555	Modern profile, 9/16" x 2-1/4", poplar		250	.032		.53	1.47		2	2.84
0560	Red oak		250	.032		.69	1.47		2.16	3.02
0565	11/16" x 2-1/2", finger jointed & primed		250	.032		.72	1.47		2.19	3.05
0570	Pine		250	.032		1.55	1.47		3.02	3.96
0575	3/4" x 2-1/2", poplar		250	.032		.82	1.47		2.29	3.16
0580	Red oak		250	.032		1.06	1.47		2.53	3.42
0585	Maple		250	.032		1.68	1.47		3.15	4.11
0590	Cherry		250	.032		2.12	1.47		3.59	4.59
0595	Mullian, 5/16" x 2", pine		270	.030		.99	1.36		2.35	3.19
0600	9/16" x 2-1/2", finger jointed and primed		250	.032		.83	1.47		2.30	3.17
0605	Pine		250	.032		1.64	1.47		3.11	4.06
0610	Red oak		250	.032		2.80	1.47		4.27	5.35
0615	1-1/16" x 3-3/4", red oak		220	.036		6.85	1.67		8.52	10.05
0620	Ogee, 7/16" x 2-1/2", poplar		250	.032		.51	1.47		1.98	2.82
0625	Red oak		250	.032		.67	1.47		2.14	3
0630	9/16" x 2-1/4", finger jointed and primed		250	.032		.47	1.47		1.94	2.78
0635	Poplar		250	.032		.53	1.47		2	2.84
0640	Red oak		250	.032		.69	1.47		2.16	3.02
0645	11/16" x 2-1/2", finger jointed and primed		250	.032		.67	1.47		2.14	3
0700	Pine		250	.032		1.52	1.47		2.99	3.93
0701	Red oak		250	.032		2.59	1.47		4.06	5.10
0730	11/16" x 3-1/2", finger jointed and primed		220	.036		2.12	1.67		3.79	4.90
0750	Pine		220	.036		2.18	1.67		3.85	4.97
0755	3/4" x 2-1/2", finger jointed and primed		250	.032		.67	1.47		2.14	3
0760	Poplar		250	.032		.82	1.47		2.29	3.16

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.30 Moldings, Casings		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labar	Equipment		
0765	Red oak	1 Corp	250	.032	L.F.	1.06	1.47		2.53	3.42
0770	Maple		250	.032		1.68	1.47		3.15	4.11
0775	Cherry		250	.032		2.12	1.47		3.59	4.59
0780	3/4" x 3-1/2", finger jointed and primed		220	.036		.85	1.67		2.52	3.50
0785	Poplar		220	.036		1.04	1.67		2.71	3.71
0790	Red oak		220	.036		1.47	1.67		3.14	4.19
0795	Maple		220	.036		2.38	1.67		4.05	5.20
0800	Cherry		220	.036		2.88	1.67		4.55	5.75
4700	Square profile, 1" x 1", teak		215	.037		2.01	1.71		3.72	4.84
4800	Rectangular profile, 1" x 3", teak		200	.040		6	1.83		7.83	9.45

06 22 13.35 Moldings, Ceilings

0010 MOLDINGS, CEILINGS										
0600	Bed, 9/16" x 1-3/4", pine	1 Corp	270	.030	L.F.	1.20	1.36		2.56	3.42
0650	9/16" x 2", pine		270	.030		1.43	1.36		2.79	3.67
0710	9/16" x 1-3/4", oak		270	.030		1.96	1.36		3.32	4.25
1200	Carnice, 9/16" x 1-3/4", pine		270	.030		1.21	1.36		2.57	3.43
1300	9/16" x 2-1/4", pine		265	.030		1.47	1.38		2.85	3.75
1350	Cove, 1/2" x 2-1/4", poplar		265	.030		.92	1.38		2.30	3.15
1360	Red oak		265	.030		1.18	1.38		2.56	3.43
1370	Hard maple		265	.030		1.69	1.38		3.07	4
1380	Cherry		265	.030		2.07	1.38		3.45	4.41
2400	9/16" x 1-3/4", pine		270	.030		1.12	1.36		2.48	3.33
2500	11/16" x 2-3/4", pine		265	.030		2.21	1.38		3.59	4.57
2510	Crown, 5/8" x 5/8", poplar		300	.027		.41	1.22		1.63	2.34
2520	Red oak		300	.027		.46	1.22		1.68	2.39
2530	Hard maple		300	.027		.66	1.22		1.88	2.61
2540	Cherry		300	.027		.70	1.22		1.92	2.66
2600	9/16" x 3-5/8", pine		250	.032		2.70	1.47		4.17	5.25
2700	11/16" x 4-1/4", pine		250	.032		4.55	1.47		6.02	7.25
2705	Oak		250	.032		6.30	1.47		7.77	9.20
2710	3/4" x 1-3/4", poplar		270	.030		.65	1.36		2.01	2.81
2720	Red oak		270	.030		.91	1.36		2.27	3.10
2730	Hard maple		270	.030		1.26	1.36		2.62	3.48
2740	Cherry		270	.030		1.55	1.36		2.91	3.80
2750	3/4" x 2", poplar		270	.030		.85	1.36		2.21	3.03
2760	Red oak		270	.030		1.10	1.36		2.46	3.31
2770	Hard maple		270	.030		1.52	1.36		2.88	3.77
2780	Cherry		270	.030		1.70	1.36		3.06	3.97
2790	3/4" x 2-3/4", poplar		265	.030		.92	1.38		2.30	3.15
2800	Red oak		265	.030		1.36	1.38		2.74	3.63
2810	Hard maple		265	.030		1.89	1.38		3.27	4.22
2820	Cherry		265	.030		2.18	1.38		3.56	4.53
2830	3/4" x 3-1/2", poplar		250	.032		1.18	1.47		2.65	3.55
2840	Red oak		250	.032		1.70	1.47		3.17	4.13
2850	Hard mople		250	.032		2.32	1.47		3.79	4.81
2860	Cherry		250	.032		2.72	1.47		4.19	5.25
2870	FJP poplar		250	.032		.84	1.47		2.31	3.18
2880	3/4" x 5", poplar		245	.033		1.75	1.50		3.25	4.23
2890	Red oak		245	.033		2.47	1.50		3.97	5
2900	Hard maple		245	.033		3.40	1.50		4.90	6.05
2910	Cherry		245	.033		3.92	1.50		5.42	6.60
2920	FJP poplar		245	.033		1.19	1.50		2.69	3.62

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.35 Moldings, Ceilings

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2930	3/4" x 6-1/4", poplar	1 Carp	240	.033	L.F.	2.09	1.53		3.62	4.65
2940	Red oak		240	.033		3	1.53		4.53	5.65
2950	Hard maple		240	.033		4.11	1.53		5.64	6.90
2960	Cherry		240	.033		4.87	1.53		6.40	7.70
2970	7/8" x 8-3/4", poplar		220	.036		3.24	1.67		4.91	6.15
2980	Red oak		220	.036		4.71	1.67		6.38	7.75
2990	Hard maple		220	.036		6.80	1.67		8.47	10.05
3000	Cherry		220	.036		7.80	1.67		9.47	11.10
3010	1" x 7-1/4", poplar		220	.036		3.43	1.67		5.10	6.35
3020	Red oak		220	.036		5.10	1.67		6.77	8.15
3030	Hard maple		220	.036		7.40	1.67		9.07	10.65
3040	Cherry		220	.036		8.60	1.67		10.27	12.05
3050	1-1/16" x 4-1/4", poplar		250	.032		2.08	1.47		3.55	4.54
3060	Red oak		250	.032		2.33	1.47		3.80	4.82
3070	Hard maple		250	.032		3.22	1.47		4.69	5.80
3080	Cherry		250	.032		4.60	1.47		6.07	7.30
3090	Dentil crown, 3/4" x 5", poplar		250	.032		1.75	1.47		3.22	4.18
3100	Red oak		250	.032		2.47	1.47		3.94	4.97
3110	Hard maple		250	.032		3.30	1.47		4.77	5.90
3120	Cherry		250	.032		3.92	1.47		5.39	6.55
3130	Dentil piece far above, 1/2" x 1/2", poplar		300	.027		2.48	1.22		3.70	4.61
3140	Red oak		300	.027		2.72	1.22		3.94	4.88
3150	Hard maple		300	.027		3.23	1.22		4.45	5.45
3160	Cherry		300	.027		3.52	1.22		4.74	5.75

06 22 13.40 Moldings, Exterior

0010	MOLDINGS, EXTERIOR									
0100	Band board, cedar, rough sawn, 1" x 2"	1 Carp	300	.027	L.F.	.54	1.22		1.76	2.49
0110	1" x 3"		300	.027		.81	1.22		2.03	2.78
0120	1" x 4"		250	.032		1.07	1.47		2.54	3.44
0130	1" x 6"		250	.032		1.61	1.47		3.08	4.03
0140	1" x 8"		225	.036		2.15	1.63		3.78	4.89
0150	1" x 10"		225	.036		2.67	1.63		4.30	5.45
0160	1" x 12"		200	.040		3.21	1.83		5.04	6.35
0240	STK, 1" x 2"		300	.027		.43	1.22		1.65	2.37
0250	1" x 3"		300	.027		.48	1.22		1.70	2.41
0260	1" x 4"		250	.032		.62	1.47		2.09	2.94
0270	1" x 6"		250	.032		.96	1.47		2.43	3.31
0280	1" x 8"		225	.036		1.41	1.63		3.04	4.07
0290	1" x 10"		225	.036		2.08	1.63		3.71	4.81
0300	1" x 12"		200	.040		3.21	1.83		5.04	6.35
0310	Pine, #2, 1" x 2"		300	.027		.25	1.22		1.47	2.17
0320	1" x 3"		300	.027		.40	1.22		1.62	2.33
0330	1" x 4"		250	.032		.49	1.47		1.96	2.80
0340	1" x 6"		250	.032		.83	1.47		2.30	3.17
0350	1" x 8"		225	.036		1.22	1.63		2.85	3.86
0360	1" x 10"		225	.036		1.59	1.63		3.22	4.27
0370	1" x 12"		200	.040		2.05	1.83		3.88	5.10
0380	D & better, 1" x 2"		300	.027		.41	1.22		1.63	2.35
0390	1" x 3"		300	.027		.61	1.22		1.83	2.57
0400	1" x 4"		250	.032		.82	1.47		2.29	3.16
0410	1" x 6"		250	.032		1.12	1.47		2.59	3.49
0420	1" x 8"		225	.036		1.62	1.63		3.25	4.30

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0430	1" x 10"	1 Carp	225	.036	L.F.	2.03	1.63		3.66	4.76
0440	1" x 12"		200	.040		2.63	1.83		4.46	5.75
0450	Redwood, clear all heart, 1" x 2"		300	.027		.63	1.22		1.85	2.59
0460	1" x 3"		300	.027		.94	1.22		2.16	2.93
0470	1" x 4"		250	.032		1.19	1.47		2.66	3.57
0480	1" x 6"		252	.032		1.78	1.46		3.24	4.21
0490	1" x 8"		225	.036		2.36	1.63		3.99	5.10
0500	1" x 10"		225	.036		3.96	1.63		5.59	6.90
0510	1" x 12"		200	.040		4.75	1.83		6.58	8.10
0530	Corner board, cedar, rough sawn, 1" x 2"		225	.036		.54	1.63		2.17	3.12
0540	1" x 3"		225	.036		.81	1.63		2.44	3.41
0550	1" x 4"		200	.040		1.07	1.83		2.90	4.01
0560	1" x 6"		200	.040		1.61	1.83		3.44	4.60
0570	1" x 8"		200	.040		2.15	1.83		3.98	5.20
0580	1" x 10"		175	.046		2.67	2.10		4.77	6.15
0590	1" x 12"		175	.046		3.21	2.10		5.31	6.75
0670	STK, 1" x 2"		225	.036		.43	1.63		2.06	3
0680	1" x 3"		225	.036		.48	1.63		2.11	3.04
0690	1" x 4"		200	.040		.60	1.83		2.43	3.49
0700	1" x 6"		200	.040		.96	1.83		2.79	3.88
0710	1" x 8"		200	.040		1.41	1.83		3.24	4.38
0720	1" x 10"		175	.046		2.08	2.10		4.18	5.50
0730	1" x 12"		175	.046		3.21	2.10		5.31	6.75
0740	Pine, #2, 1" x 2"		225	.036		.25	1.63		1.88	2.80
0750	1" x 3"		225	.036		.40	1.63		2.03	2.96
0760	1" x 4"		200	.040		.49	1.83		2.32	3.37
0770	1" x 6"		200	.040		.83	1.83		2.66	3.74
0780	1" x 8"		200	.040		1.22	1.83		3.05	4.17
0790	1" x 10"		175	.046		1.59	2.10		3.69	4.98
0800	1" x 12"		175	.046		2.05	2.10		4.15	5.50
0810	D & better, 1" x 2"		225	.036		.41	1.63		2.04	2.98
0820	1" x 3"		225	.036		.61	1.63		2.24	3.20
0830	1" x 4"		200	.040		.82	1.83		2.65	3.73
0840	1" x 6"		200	.040		1.12	1.83		2.95	4.06
0850	1" x 8"		200	.040		1.62	1.83		3.45	4.61
0860	1" x 10"		175	.046		2.03	2.10		4.13	5.45
0870	1" x 12"		175	.046		2.63	2.10		4.73	6.15
0880	Redwood, clear all heart, 1" x 2"		225	.036		.63	1.63		2.26	3.22
0890	1" x 3"		225	.036		.94	1.63		2.57	3.56
0900	1" x 4"		200	.040		1.19	1.83		3.02	4.14
0910	1" x 6"		200	.040		1.78	1.83		3.61	4.79
0920	1" x 8"		200	.040		2.36	1.83		4.19	5.40
0930	1" x 10"		175	.046		3.96	2.10		6.06	7.60
0940	1" x 12"		175	.046		4.75	2.10		6.85	8.50
0950	Cornice board, cedar, rough sown, 1" x 2"		330	.024		.54	1.11		1.65	2.32
0960	1" x 3"		290	.028		.81	1.27		2.08	2.84
0970	1" x 4"		250	.032		1.07	1.47		2.54	3.44
0980	1" x 6"		250	.032		1.61	1.47		3.08	4.03
0990	1" x 8"		200	.040		2.15	1.83		3.98	5.20
1000	1" x 10"		180	.044		2.67	2.04		4.71	6.10
1010	1" x 12"		180	.044		3.21	2.04		5.25	6.65
1020	STK, 1" x 2"		330	.024		.43	1.11		1.54	2.20
1030	1" x 3"		290	.028		.48	1.27		1.75	2.47

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1040	1" x 4"	1 Corp	250	.032	L.F.	.62	1.47		2.09	2.94
1050	1" x 6"		250	.032		.96	1.47		2.43	3.31
1060	1" x 8"		200	.040		1.41	1.83		3.24	4.38
1070	1" x 10"		180	.044		2.08	2.04		4.12	5.45
1080	1" x 12"		180	.044		3.21	2.04		5.25	6.65
1500	Pine, #2, 1" x 2"		330	.024		.25	1.11		1.36	2
1510	1" x 3"		290	.028		.27	1.27		1.54	2.25
1600	1" x 4"		250	.032		.49	1.47		1.96	2.80
1700	1" x 6"		250	.032		.83	1.47		2.30	3.17
1800	1" x 8"		200	.040		1.22	1.83		3.05	4.17
1900	1" x 10"		180	.044		1.59	2.04		3.63	4.89
2000	1" x 12"		180	.044		2.05	2.04		4.09	5.40
2020	D & better, 1" x 2"		330	.024		.41	1.11		1.52	2.18
2030	1" x 3"		290	.028		.61	1.27		1.88	2.63
2040	1" x 4"		250	.032		.82	1.47		2.29	3.16
2050	1" x 6"		250	.032		1.12	1.47		2.59	3.49
2060	1" x 8"		200	.040		1.62	1.83		3.45	4.61
2070	1" x 10"		180	.044		2.03	2.04		4.07	5.40
2080	1" x 12"		180	.044		2.63	2.04		4.67	6.05
2090	Redwood, clear all heart, 1" x 2"		330	.024		.63	1.11		1.74	2.42
2100	1" x 3"		290	.028		.94	1.27		2.21	2.99
2110	1" x 4"		250	.032		1.19	1.47		2.66	3.57
2120	1" x 6"		250	.032		1.78	1.47		3.25	4.22
2130	1" x 8"		200	.040		2.36	1.83		4.19	5.40
2140	1" x 10"		180	.044		3.96	2.04		6	7.50
2150	1" x 12"		180	.044		4.75	2.04		6.79	8.40
2160	3 piece, 1" x 2", 1" x 4", 1" x 6", rough sawn cedar		80	.100		3.24	4.59		7.83	10.65
2180	STK cedar		80	.100		2.01	4.59		6.60	9.30
2200	#2 pine		80	.100		1.57	4.59		6.16	8.85
2210	D & better pine		80	.100		2.35	4.59		6.94	9.70
2220	Clear all heart redwood		80	.100		3.60	4.59		8.19	11.05
2230	1" x 8", 1" x 10", 1" x 12", rough sawn cedar		65	.123		8	5.65		13.65	17.50
2240	STK cedar		65	.123		6.65	5.65		12.30	16.05
2300	#2 pine		65	.123		4.83	5.65		10.48	14
2320	D & better pine		65	.123		6.25	5.65		11.90	15.60
2330	Clear all heart redwood		65	.123		11.05	5.65		16.70	21
2340	Door/window casing, cedar, rough sawn, 1" x 2"		275	.029		.54	1.33		1.87	2.66
2350	1" x 3"		275	.029		.81	1.33		2.14	2.95
2360	1" x 4"		250	.032		1.07	1.47		2.54	3.44
2370	1" x 6"		250	.032		1.61	1.47		3.08	4.03
2380	1" x 8"		230	.035		2.15	1.59		3.74	4.83
2390	1" x 10"		230	.035		2.67	1.59		4.26	5.40
2395	1" x 12"		210	.038		3.21	1.75		4.96	6.25
2410	STK, 1" x 2"		275	.029		.43	1.33		1.76	2.54
2420	1" x 3"		275	.029		.48	1.33		1.81	2.58
2430	1" x 4"		250	.032		.62	1.47		2.09	2.94
2440	1" x 6"		250	.032		.96	1.47		2.43	3.31
2450	1" x 8"		230	.035		1.41	1.59		3	4.01
2460	1" x 10"		230	.035		2.08	1.59		3.67	4.75
2470	1" x 12"		210	.038		3.21	1.75		4.96	6.25
2550	Pine, #2, 1" x 2"		275	.029		.25	1.33		1.58	2.34
2560	1" x 3"		275	.029		.40	1.33		1.73	2.50
2570	1" x 4"		250	.032		.49	1.47		1.96	2.80

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2580	1" x 6"	1 Corp	250	.032	L.F.	.83	1.47		2.30	3.17
2590	1" x 8"		230	.035		1.22	1.59		2.81	3.80
2600	1" x 10"		230	.035		1.59	1.59		3.18	4.21
2610	1" x 12"		210	.038		2.05	1.75		3.80	4.95
2620	Pine, D & better, 1" x 2"		275	.029		.41	1.33		1.74	2.52
2630	1" x 3"		275	.029		.61	1.33		1.94	2.74
2640	1" x 4"		250	.032		.82	1.47		2.29	3.16
2650	1" x 6"		250	.032		1.12	1.47		2.59	3.49
2660	1" x 8"		230	.035		1.62	1.59		3.21	4.24
2670	1" x 10"		230	.035		2.03	1.59		3.62	4.70
2680	1" x 12"		210	.038		2.63	1.75		4.38	5.60
2690	Redwood, clear all heart, 1" x 2"		275	.029		.63	1.33		1.96	2.76
2695	1" x 3"		275	.029		.94	1.33		2.27	3.10
2710	1" x 4"		250	.032		1.19	1.47		2.66	3.57
2715	1" x 6"		250	.032		1.78	1.47		3.25	4.22
2730	1" x 8"		230	.035		2.36	1.59		3.95	5.05
2740	1" x 10"		230	.035		3.96	1.59		5.55	6.80
2750	1" x 12"		210	.038		4.75	1.75		6.50	7.95
3500	Bellyband, 11/16" x 4-1/4"		250	.032		3.23	1.47		4.70	5.80
3610	Brickmold, pine, 1-1/4" x 2"		200	.040		2.50	1.83		4.33	5.60
3620	FJP, 1-1/4" x 2"		200	.040		1.06	1.83		2.89	4
5100	Fascia, cedar, rough sawn, 1" x 2"		275	.029		.54	1.33		1.87	2.66
5110	1" x 3"		275	.029		.81	1.33		2.14	2.95
5120	1" x 4"		250	.032		1.07	1.47		2.54	3.44
5200	1" x 6"		250	.032		1.61	1.47		3.08	4.03
5300	1" x 8"		230	.035		2.15	1.59		3.74	4.83
5310	1" x 10"		230	.035		2.67	1.59		4.26	5.40
5320	1" x 12"		210	.038		3.21	1.75		4.96	6.25
5400	2" x 4"		220	.036		1.05	1.67		2.72	3.73
5500	2" x 6"		220	.036		1.58	1.67		3.25	4.31
5600	2" x 8"		200	.040		2.11	1.83		3.94	5.15
5700	2" x 10"		180	.044		2.62	2.04		4.66	6.05
5800	2" x 12"		170	.047		6.25	2.16		8.41	10.25
6120	STK, 1" x 2"		275	.029		.43	1.33		1.76	2.54
6130	1" x 3"		275	.029		.48	1.33		1.81	2.58
6140	1" x 4"		250	.032		.62	1.47		2.09	2.94
6150	1" x 6"		250	.032		.96	1.47		2.43	3.31
6160	1" x 8"		230	.035		1.41	1.59		3	4.01
6170	1" x 10"		230	.035		2.08	1.59		3.67	4.75
6180	1" x 12"		210	.038		3.21	1.75		4.96	6.25
6185	2" x 2"		260	.031		.56	1.41		1.97	2.80
6190	Pine, #2, 1" x 2"		275	.029		.25	1.33		1.58	2.34
6200	1" x 3"		275	.029		.40	1.33		1.73	2.50
6210	1" x 4"		250	.032		.49	1.47		1.96	2.80
6220	1" x 6"		250	.032		.83	1.47		2.30	3.17
6230	1" x 8"		230	.035		1.22	1.59		2.81	3.80
6240	1" x 10"		230	.035		1.59	1.59		3.18	4.21
6250	1" x 12"		210	.038		2.05	1.75		3.80	4.95
6260	D & better, 1" x 2"		275	.029		.41	1.33		1.74	2.52
6270	1" x 3"		275	.029		.61	1.33		1.94	2.74
6280	1" x 4"		250	.032		.82	1.47		2.29	3.16
6290	1" x 6"		250	.032		1.12	1.47		2.59	3.49
6300	1" x 8"		230	.035		1.62	1.59		3.21	4.24

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6310	1" x 10"	1 Corp	230	.035	L.F.	2.03	1.59		3.62	4.70
6312	1" x 12"		210	.038		2.63	1.75		4.38	5.60
6330	Southern yellow, 1-1/4" x 5"		240	.033		2.27	1.53		3.80	4.85
6340	1-1/4" x 6"		240	.033		2.52	1.53		4.05	5.15
6350	1-1/4" x 8"		215	.037		3.43	1.71		5.14	6.40
6360	1-1/4" x 12"		190	.042		5.05	1.93		6.98	8.55
6370	Redwood, clear oil heart, 1" x 2"		275	.029		.63	1.33		1.96	2.76
6380	1" x 3"		275	.029		1.19	1.33		2.52	3.37
6390	1" x 4"		250	.032		1.19	1.47		2.66	3.57
6400	1" x 6"		250	.032		1.78	1.47		3.25	4.22
6410	1" x 8"		230	.035		2.36	1.59		3.95	5.05
6420	1" x 10"		230	.035		3.96	1.59		5.55	6.80
6430	1" x 12"		210	.038		4.75	1.75		6.50	7.95
6440	1-1/4" x 5"		240	.033		1.86	1.53		3.39	4.40
6450	1-1/4" x 6"		240	.033		2.22	1.53		3.75	4.80
6460	1-1/4" x 8"		215	.037		3.53	1.71		5.24	6.50
6470	1-1/4" x 12"		190	.042		7.10	1.93		9.03	10.85
6580	Frieze, cedar, rough sown, 1" x 2"		275	.029		.54	1.33		1.87	2.66
6590	1" x 3"		275	.029		.81	1.33		2.14	2.95
6600	1" x 4"		250	.032		1.07	1.47		2.54	3.44
6610	1" x 6"		250	.032		1.61	1.47		3.08	4.03
6620	1" x 8"		250	.032		2.15	1.47		3.62	4.63
6630	1" x 10"		225	.036		2.67	1.63		4.30	5.45
6640	1" x 12"		200	.040		3.18	1.83		5.01	6.35
6650	STK, 1" x 2"		275	.029		.43	1.33		1.76	2.54
6660	1" x 3"		275	.029		.48	1.33		1.81	2.58
6670	1" x 4"		250	.032		.62	1.47		2.09	2.94
6680	1" x 6"		250	.032		.96	1.47		2.43	3.31
6690	1" x 8"		250	.032		1.41	1.47		2.88	3.81
6700	1" x 10"		225	.036		2.08	1.63		3.71	4.81
6710	1" x 12"		200	.040		3.21	1.83		5.04	6.35
6790	Pine, #2, 1" x 2"		275	.029		.25	1.33		1.58	2.34
6800	1" x 3"		275	.029		.40	1.33		1.73	2.50
6810	1" x 4"		250	.032		.49	1.47		1.96	2.80
6820	1" x 6"		250	.032		.83	1.47		2.30	3.17
6830	1" x 8"		250	.032		1.22	1.47		2.69	3.60
6840	1" x 10"		225	.036		1.59	1.63		3.22	4.27
6850	1" x 12"		200	.040		2.05	1.83		3.88	5.10
6860	D & better, 1" x 2"		275	.029		.41	1.33		1.74	2.52
6870	1" x 3"		275	.029		.61	1.33		1.94	2.74
6880	1" x 4"		250	.032		.82	1.47		2.29	3.16
6890	1" x 6"		250	.032		1.12	1.47		2.59	3.49
6900	1" x 8"		250	.032		1.62	1.47		3.09	4.04
6910	1" x 10"		225	.036		2.03	1.63		3.66	4.76
6920	1" x 12"		200	.040		2.63	1.83		4.46	5.75
6930	Redwood, clear oil heart, 1" x 2"		275	.029		.63	1.33		1.96	2.76
6940	1" x 3"		275	.029		.94	1.33		2.27	3.10
6950	1" x 4"		250	.032		1.19	1.47		2.66	3.57
6960	1" x 6"		250	.032		1.78	1.47		3.25	4.22
6970	1" x 8"		250	.032		2.36	1.47		3.83	4.85
6980	1" x 10"		225	.036		3.96	1.63		5.59	6.90
6990	1" x 12"		200	.040		4.75	1.83		6.58	8.10
7000	Grounds, 1" x 1", cedar, rough sawn		300	.027		.28	1.22		1.50	2.19

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
7010	STK	1 Carp	300	.027	L.F.	.27	1.22		1.49	2.18
7020	Pine, #2		300	.027		.16	1.22		1.38	2.06
7030	D & better		300	.027		.25	1.22		1.47	2.17
7050	Redwood		300	.027		.39	1.22		1.61	2.31
7060	Rake/verge board, cedar, rough sawn, 1" x 2"		225	.036		.54	1.63		2.17	3.12
7070	1" x 3"		225	.036		.81	1.63		2.44	3.41
7080	1" x 4"		200	.040		1.07	1.83		2.90	4.01
7090	1" x 6"		200	.040		1.61	1.83		3.44	4.60
7100	1" x 8"		190	.042		2.15	1.93		4.08	5.35
7110	1" x 10"		190	.042		2.67	1.93		4.60	5.90
7120	1" x 12"		180	.044		3.21	2.04		5.25	6.65
7130	STK, 1" x 2"		225	.036		.43	1.63		2.06	3
7140	1" x 3"		225	.036		.48	1.63		2.11	3.04
7150	1" x 4"		200	.040		.62	1.83		2.45	3.51
7160	1" x 6"		200	.040		.96	1.83		2.79	3.88
7170	1" x 8"		190	.042		1.41	1.93		3.34	4.53
7180	1" x 10"		190	.042		2.08	1.93		4.01	5.25
7190	1" x 12"		180	.044		3.21	2.04		5.25	6.65
7200	Pine, #2, 1" x 2"		225	.036		.25	1.63		1.88	2.80
7210	1" x 3"		225	.036		.40	1.63		2.03	2.96
7220	1" x 4"		200	.040		.49	1.83		2.32	3.37
7230	1" x 6"		200	.040		.83	1.83		2.66	3.74
7240	1" x 8"		190	.042		1.22	1.93		3.15	4.32
7250	1" x 10"		190	.042		1.59	1.93		3.52	4.73
7260	1" x 12"		180	.044		2.05	2.04		4.09	5.40
7340	D & better, 1" x 2"		225	.036		.41	1.63		2.04	2.98
7350	1" x 3"		225	.036		.61	1.63		2.24	3.20
7360	1" x 4"		200	.040		.82	1.83		2.65	3.73
7370	1" x 6"		200	.040		1.12	1.83		2.95	4.06
7380	1" x 8"		190	.042		1.62	1.93		3.55	4.76
7390	1" x 10"		190	.042		2.03	1.93		3.96	5.20
7400	1" x 12"		180	.044		2.63	2.04		4.67	6.05
7410	Redwood, clear all heart, 1" x 2"		225	.036		.63	1.63		2.26	3.22
7420	1" x 3"		225	.036		.94	1.63		2.57	3.56
7430	1" x 4"		200	.040		1.19	1.83		3.02	4.14
7440	1" x 6"		200	.040		1.78	1.83		3.61	4.79
7450	1" x 8"		190	.042		2.36	1.93		4.29	5.55
7460	1" x 10"		190	.042		3.96	1.93		5.89	7.35
7470	1" x 12"		180	.044		4.75	2.04		6.79	8.40
7480	2" x 4"		200	.040		2.29	1.83		4.12	5.35
7490	2" x 6"		182	.044		3.43	2.02		5.45	6.90
7500	2" x 8"		165	.048		4.56	2.22		6.78	8.45
7630	Soffit, cedar, rough sawn, 1" x 2"	2 Carp	440	.036		.54	1.67		2.21	3.17
7640	1" x 3"		440	.036		.81	1.67		2.48	3.46
7650	1" x 4"		420	.038		1.07	1.75		2.82	3.88
7660	1" x 6"		420	.038		1.61	1.75		3.36	4.47
7670	1" x 8"		420	.038		2.15	1.75		3.90	5.05
7680	1" x 10"		400	.040		2.67	1.83		4.50	5.75
7690	1" x 12"		400	.040		3.21	1.83		5.04	6.35
7700	STK, 1" x 2"		440	.036		.43	1.67		2.10	3.05
7710	1" x 3"		440	.036		.48	1.67		2.15	3.09
7720	1" x 4"		420	.038		.62	1.75		2.37	3.38
7730	1" x 6"		420	.038		.96	1.75		2.71	3.75

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
7740	1" x 8"	2 Carp	420	.038	L.F.	1.41	1.75		3.16	4.25
7750	1" x 10"		400	.040		2.08	1.83		3.91	5.10
7760	1" x 12"		400	.040		3.21	1.83		5.04	6.35
7770	Pine, #2, 1" x 2"		440	.036		.25	1.67		1.92	2.85
7780	1" x 3"		440	.036		.40	1.67		2.07	3.0
7790	1" x 4"		420	.038		.49	1.75		2.24	3.24
7800	1" x 6"		420	.038		.83	1.75		2.58	3.61
7810	1" x 8"		420	.038		1.22	1.75		2.97	4.04
7820	1" x 10"		400	.040		1.59	1.83		3.42	4.58
7830	1" x 12"		400	.040		2.05	1.83		3.88	5.10
7840	D & better, 1" x 2"		440	.036		.41	1.67		2.08	3.03
7850	1" x 3"		440	.036		.61	1.67		2.28	3.25
7860	1" x 4"		420	.038		.82	1.75		2.57	3.60
7870	1" x 6"		420	.038		1.12	1.75		2.87	3.93
7880	1" x 8"		420	.038		1.62	1.75		3.37	4.48
7890	1" x 10"		400	.040		2.03	1.83		3.86	5.05
7900	1" x 12"		400	.040		2.63	1.83		4.46	5.75
7910	Redwood, clear all heart, 1" x 2"		440	.036		.63	1.67		2.30	3.27
7920	1" x 3"		440	.036		.94	1.67		2.61	3.61
7930	1" x 4"		420	.038		1.19	1.75		2.94	4.01
7940	1" x 6"		420	.038		1.78	1.75		3.53	4.66
7950	1" x 8"		420	.038		2.36	1.75		4.11	5.30
7960	1" x 10"		400	.040		3.96	1.83		5.79	7.20
7970	1" x 12"		400	.040		4.75	1.83		6.58	8.10
8050	Trim, crown molding, pine, 1 1/16" x 4-1/4"	1 Carp	250	.032		4.54	1.47		6.01	7.25
8060	Back band, 1 1/16" x 1-1/16"		250	.032		.99	1.47		2.46	3.35
8070	Insect screen frame stock, 1-1/16" x 1-3/4"		395	.020		2.39	.93		3.32	4.06
8080	Dentils, 2-1/2" x 2-1/2" x 4", 6" O.C.		30	.267		1.22	12.25		13.47	20
8100	Fluted, 5-1/2"		165	.048		4.52	2.22		6.74	8.40
8110	Stucco bead, 1-3/8" x 1-5/8"		250	.032		2.50	1.47		3.97	5
06 22 13.45 Moldings, Trim										
0010	MOLDINGS, TRIM									
0200	Astragal, stock pine, 1 1/16" x 1-3/4"	1 Carp	255	.031	L.F.	1.42	1.44		2.86	3.78
0250	1-5/16" x 2-3/16"		240	.033		2.10	1.53		3.63	4.67
0800	Chair rail, stock pine, 5/8" x 2-1/2"		270	.030		1.68	1.36		3.04	3.95
0900	5/8" x 3-1/2"		240	.033		2.65	1.53		4.18	5.30
1000	Closet pole, stock pine, 1-1/8" diameter		200	.040		1.22	1.83		3.05	4.17
1100	Fir, 1-5/8" diameter		200	.040		2.36	1.83		4.19	5.45
3300	Half round, stock pine, 1/4" x 1/2"		270	.030		.31	1.36		1.67	2.44
3350	1/2" x 1"		255	.031		.74	1.44		2.18	3.03
3400	Handrail, fir, single piece, stock, hardware not included									
3450	1-1/2" x 1-3/4"	1 Carp	80	.100	L.F.	2.50	4.59		7.09	9.85
3470	Pine, 1-1/2" x 1-3/4"		80	.100		2.38	4.59		6.97	9.70
3500	1-1/2" x 2-1/2"		76	.105		2.67	4.83		7.50	10.40
3600	Lattice, stock pine, 1/4" x 1-1/8"		270	.030		.51	1.36		1.87	2.66
3700	1/4" x 1-3/4"		250	.032		.92	1.47		2.39	3.27
3800	Miscellaneous, custom, pine, 1" x 1"		270	.030		.38	1.36		1.74	2.52
3850	1" x 2"		265	.030		.76	1.38		2.14	2.98
3900	1" x 3"		240	.033		1.14	1.53		2.67	3.61
4100	Birch or oak, nominal 1" x 1"		240	.033		.45	1.53		1.98	2.85
4200	Nominal 1" x 3"		215	.037		1.34	1.71		3.05	4.10
4400	Walnut, nominal 1" x 1"		215	.037		.54	1.71		2.25	3.23

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.45 Moldings, Trim		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4500	Nominal 1" x 3"	1 Corp	200	.040	L.F.	1.63	1.83		3.46	4.62
4700	Teak, nominal 1" x 1"		215	.037		2.54	1.71		4.25	5.40
4800	Nominal 1" x 3"		200	.040		7.60	1.83		9.43	11.20
4900	Quarter round, stock pine, 1/4" x 1/4"		275	.029		.31	1.33		1.64	2.40
4950	3/4" x 3/4"		255	.031		.71	1.44		2.15	3
5600	Wainscot moldings, 1-1/8" x 9/16", 2' high, minimum		76	.105	S.F.	12.35	4.83		17.18	21
5700	Maximum		65	.123	"	15.65	5.65		21.30	26

06 22 13.50 Moldings, Window and Door

0010	MOLDINGS, WINDOW AND DOOR									
2800	Door moldings, stock, decorative, 1-1/8" wide, plain	1 Corp	17	.471	Set	51.50	21.50		73	90
2900	Detailed		17	.471	"	87.50	21.50		109	130
2960	Clear pine door jamb, no stops, 11/16" x 4-9/16"		240	.033	L.F.	5.15	1.53		6.68	8.05
3150	Door trim set, 1 head and 2 sides, pine, 2-1/2" wide		12	.667	Opng.	25.50	30.50		56	75
3170	3-1/2" wide		11	.727	"	37	33.50		70.50	92
3250	Gloss beads, stock pine, 3/8" x 1/2"		275	.029	L.F.	.37	1.33		1.70	2.47
3270	3/8" x 7/8"		270	.030		.50	1.36		1.86	2.65
4850	Porting bead, stock pine, 3/8" x 3/4"		275	.029		.45	1.33		1.78	2.56
4870	1/2" x 3/4"		255	.031		.57	1.44		2.01	2.85
5000	Stool caps, stock pine, 11/16" x 3-1/2"		200	.040		2.65	1.83		4.48	5.75
5100	1-1/16" x 3-1/4"		150	.053		4.15	2.45		6.60	8.35
5300	Threshold, oak, 3' long, inside, 5/8" x 3-5/8"		32	.250	Eq.	6.40	11.45		17.85	25
5400	Outside, 1-1/2" x 7-5/8"		16	.500	"	38	23		61	77.50
5900	Window trim sets, including casings, header, stops,									
5910	stool and opcon, 2-1/2" wide, minimum	1 Corp	13	.615	Opng.	37	28		65	84
5950	Average		10	.800		43.50	36.50		80	105
6000	Maximum		6	1.333		62.50	61		123.50	164

06 22 13.60 Moldings, Soffits

0010	MOLDINGS, SOFFITS									
0200	Soffits, pine, 1" x 4"	2 Corp	420	.038	L.F.	.47	1.75		2.22	3.21
0210	1" x 6"		420	.038		.80	1.75		2.55	3.58
0220	1" x 8"		420	.038		1.19	1.75		2.94	4.01
0230	1" x 10"		400	.040		1.55	1.83		3.38	4.53
0240	1" x 12"		400	.040		2.01	1.83		3.84	5.05
0250	STK cedar, 1" x 4"		420	.038		.59	1.75		2.34	3.35
0260	1" x 6"		420	.038		.93	1.75		2.68	3.72
0270	1" x 8"		420	.038		1.38	1.75		3.13	4.22
0280	1" x 10"		400	.040		2.04	1.83		3.87	5.05
0290	1" x 12"		400	.040		3.17	1.83		5	6.30
1000	Exterior AC plywood, 1/4" thick		400	.040	S.F.	.62	1.83		2.45	3.51
1050	3/8" thick		400	.040		.93	1.83		2.76	3.85
1100	1/2" thick		400	.040		1.06	1.83		2.89	4
1150	Polyvinyl chloride, white, solid	1 Corp	230	.035		2.04	1.59		3.63	4.70
1160	Perforated	"	230	.035		2.04	1.59		3.63	4.70
1170	Accessories, "J" channel 5/8"	2 Corp	700	.023	L.F.	.43	1.05		1.48	2.09

06 25 Prefinished Paneling

06 25 13 – Prefinished Hardboard Paneling

06 25 13.10 Paneling, Hardboard				Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	PANELING, HARDBOARD											
0050	Nat incl. furring or trim, hardboard, tempered, 1/8" thick		2 Carp	500	.032	S.F.		.39	1.47		1.86	2.69
0100	1/4" thick			500	.032			.63	1.47		2.10	2.95
0300	Tempered pegboard, 1/8" thick			500	.032			.40	1.47		1.87	2.70
0400	1/4" thick			500	.032			.65	1.47		2.12	2.98
0600	Untempered hardboard, natural finish, 1/8" thick			500	.032			.41	1.47		1.88	2.71
0700	1/4" thick			500	.032			.50	1.47		1.97	2.81
0900	Untempered pegboard, 1/8" thick			500	.032			.42	1.47		1.89	2.72
1000	1/4" thick			500	.032			.46	1.47		1.93	2.77
1200	Plastic faced hardboard, 1/8" thick			500	.032			.63	1.47		2.10	2.95
1300	1/4" thick			500	.032			.86	1.47		2.33	3.21
1500	Plastic faced pegboard, 1/8" thick			500	.032			.64	1.47		2.11	2.96
1600	1/4" thick			500	.032			.82	1.47		2.29	3.16
1800	Wood grained, plain or grooved, 1/4" thick, minimum			500	.032			.66	1.47		2.13	2.99
1900	Maximum			425	.038			1.35	1.73		3.08	4.15
2100	Moldings for hardboard, wood or aluminum, minimum			500	.032	L.F.		.39	1.47		1.86	2.69
2200	Maximum			425	.038	"		1.29	1.73		3.02	4.08

06 25 16 – Prefinished Plywood Paneling

06 25 16.10 Paneling, Plywood												
0010	PANELING, PLYWOOD		R061636-20									
2400	Plywood, prefinished, 1/4" thick, 4' x 8' sheets											
2410	with vertical grooves. Birch faced, minimum			2 Carp	500	.032	S.F.	.41	1.47		1.88	2.71
2420	Average				420	.038		.83	1.75		2.58	3.61
2430	Maximum				350	.046		1.25	2.10		3.35	4.61
2600	Mahogany, African				400	.040		2.90	1.83		4.73	6
2700	Philippine (Lauan)				500	.032		.60	1.47		2.07	2.92
2900	Oak or Cherry, minimum				500	.032		.34	1.47		1.81	2.63
3000	Maximum				400	.040		2.06	1.83		3.89	5.10
3200	Rosewood				320	.050		2.90	2.29		5.19	6.75
3400	Teak				400	.040		2.90	1.83		4.73	6
3600	Chestnut				375	.043		4.87	1.96		6.83	8.35
3800	Pecan				400	.040		2.10	1.83		3.93	5.15
3900	Walnut, minimum				500	.032		2.06	1.47		3.53	4.53
3950	Maximum				400	.040		5.30	1.83		7.13	8.70
4000	Plywood, prefinished, 3/4" thick, stock grades, minimum				320	.050		1.56	2.29		3.85	5.25
4100	Maximum				224	.071		4.68	3.28		7.96	10.20
4300	Architectural grade, minimum				224	.071		4.68	3.28		7.96	10.20
4400	Maximum				160	.100		4.68	4.59		9.27	12.25
4600	Plywood, "A" face, birch, VC, 1/2" thick, natural				450	.036		2.18	1.63		3.81	4.92
4700	Select				450	.036		2.18	1.63		3.81	4.92
4900	Veneer core, 3/4" thick, natural				320	.050		2.03	2.29		4.32	5.75
5000	Select				320	.050		2.27	2.29		4.56	6.05
5200	Lumber core, 3/4" thick, natural				320	.050		3.05	2.29		5.34	6.90
5500	Plywood, knotty pine, 1/4" thick, A2 grade				450	.036		1.67	1.63		3.30	4.36
5600	A3 grade				450	.036		2.10	1.63		3.73	4.83
5800	3/4" thick, veneer core, A2 grade				320	.050		2.15	2.29		4.44	5.90
5900	A3 grade				320	.050		2.42	2.29		4.71	6.20
6100	Aromatic cedar, 1/4" thick, plywood				400	.040		2.12	1.83		3.95	5.15
6200	1/4" thick, particle board				400	.040		1.03	1.83		2.86	3.96

06 25 Prefinished Paneling

06 25 26 – Panel System

06 25 26.10 Panel Systems		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	PANEL SYSTEMS									
0100	Raised panel, eng. wood core w/wood veneer, std., paint grade	2 Carp	300	.053	S.F.	10.35	2.45		12.80	15.15
0110	Oak veneer		300	.053		24	2.45		26.45	30
0120	Maple veneer		300	.053		30	2.45		32.45	37
0130	Cherry veneer		300	.053		34.50	2.45		36.95	41.50
0300	Class I fire rated, paint grade		300	.053		12	2.45		14.45	16.95
0310	Oak veneer		300	.053		28	2.45		30.45	34.50
0320	Maple veneer		300	.053		37.50	2.45		39.95	45
0330	Cherry veneer		300	.053		45	2.45		47.45	53.50
0510	Beadboard, 5/8" MDF, standard, primed		300	.053		7.85	2.45		10.30	12.35
0520	Oak veneer, unfinished		300	.053		12.40	2.45		14.85	17.40
0530	Maple veneer, unfinished		300	.053		13.55	2.45		16	18.65
0610	Rustic paneling, 5/8" MDF, standard, maple veneer, unfinished	▼	300	.053	▼	13.60	2.45		16.05	18.70

06 26 Board Paneling

06 26 13 – Profile Board Paneling

06 26 13.10 Paneling, Boards

0010	PANELING, BOARDS									
6400	Wood board paneling, 3/4" thick, knotty pine	2 Carp	300	.053	S.F.	1.91	2.45		4.36	5.85
6500	Rough sawn cedar		300	.053		3.09	2.45		5.54	7.15
6700	Redwood, clear, 1" x 4" boards		300	.053		4.96	2.45		7.41	9.20
6900	Aromatic cedar, closet lining, boards	▼	275	.058	▼	2.02	2.67		4.69	6.35

06 43 Wood Stairs and Railings

06 43 13 – Wood Stairs

06 43 13.20 Prefabricated Wood Stairs

0010	PREFABRICATED WOOD STAIRS									
0100	Box stairs, prefabricated, 3'-0" wide									
0110	Oak treads, up to 14 risers	2 Carp	39	.410	Riser	92.50	18.80		111.30	131
0600	With pine treads for carpet, up to 14 risers	"	39	.410	"	59.50	18.80		78.30	94.50
1100	For 4' wide stairs, add				Flight	25%				
1550	Stairs, prefabricated stair handrail with balusters	1 Carp	30	.267	L.F.	74	12.25		86.25	100
1700	Basement stairs, prefabricated, pine treads									
1710	Pine risers, 3' wide, up to 14 risers	2 Carp	52	.308	Riser	59.50	14.10		73.60	87.50
4000	Residential, wood, oak treads, prefabricated		1.50	10.667	Flight	1,200	490		1,690	2,075
4200	Built in place	▼	.44	36.364	"	1,900	1,675		3,575	4,675
4400	Spiral, oak, 4'-6" diameter, unfinished, prefabricated,									
4500	incl. railing, 9' high	2 Carp	1.50	10.667	Flight	3,625	490		4,115	4,725

06 43 13.40 Wood Stair Parts

0010	WOOD STAIR PARTS									
0020	Pin top balusters, 1-1/4", oak, 34"	1 Carp	96	.083	Ea.	7.80	3.82		11.62	14.50
0030	38"		96	.083		9.85	3.82		13.67	16.75
0040	42"		96	.083		12.10	3.82		15.92	19.20
0050	Paplar, 34"		96	.083		3.05	3.82		6.87	9.25
0060	38"		96	.083		3.88	3.82		7.70	10.15
0070	42"		96	.083		8.85	3.82		12.67	15.60
0080	Maple, 34"		96	.083		4.90	3.82		8.72	11.30
0090	38"		96	.083		5.60	3.82		9.42	12.10

06 43 Wood Stairs and Railings

06 43 13 – Wood Stairs

06 43 13.40 Wood Stair Parts		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0100	42"	1 Corp	96	.083	Eo.	6.50	3.82		10.32	13.05
0130	Primed, 34"		96	.083		3	3.82		6.82	9.20
0140	38"		96	.083		3.62	3.82		7.44	9.90
0150	42"		96	.083		4.42	3.82		8.24	10.75
0180	Box top balusters, 1-1/4", oak, 34"		60	.133		10.85	6.10		16.95	21.50
0190	38"		60	.133		12.50	6.10		18.60	23
0200	42"		60	.133		12.95	6.10		19.05	23.50
0210	Poplar, 34"		60	.133		8.65	6.10		14.75	18.95
0220	38"		60	.133		9.50	6.10		15.60	19.90
0230	42"		60	.133		10	6.10		16.10	20.50
0240	Mopla, 34"		60	.133		11.90	6.10		18	22.50
0250	38"		60	.133		13.80	6.10		19.90	24.50
0260	42"		60	.133		14.20	6.10		20.30	25
0290	Primed, 34"		60	.133		7	6.10		13.10	17.15
0300	38"		60	.133		8	6.10		14.10	18.25
0310	42"		60	.133		8.35	6.10		14.45	18.65
0340	Square balusters, cut from lineal stock, pine, 1-1/16" x 1-1/16"		180	.044	L.F.	1.49	2.04		3.53	4.78
0350	1-5/16" x 1-5/16"		180	.044		2	2.04		4.04	5.35
0360	1-5/8" x 1-5/8"		180	.044		3.29	2.04		5.33	6.75
0370	Turned newel, oak, 3-1/2" square, 48" high		8	1	Eo.	94.50	46		140.50	175
0380	62" high		8	1		138	46		184	223
0390	Poplar, 3-1/2" square, 48" high		8	1		55	46		101	132
0400	62" high		8	1		75	46		121	154
0410	Maple, 3-1/2" square, 48" high		8	1		66	46		112	144
0420	62" high		8	1		93	46		139	173
0430	Square newel, oak, 3-1/2" square, 48" high		8	1		50	46		96	126
0440	58" high		8	1		70	46		116	148
0450	Poplar, 3-1/2" square, 48" high		8	1		35	46		81	110
0460	58" high		8	1		39	46		85	114
0470	Maple, 3" square, 48" high		8	1		50	46		96	126
0480	58" high		8	1		62	46		108	139
0490	Railings, oak, minimum		96	.083	L.F.	9.50	3.82		13.32	16.35
0500	Average		96	.083		12.90	3.82		16.72	20
0510	Maximum		96	.083		13.50	3.82		17.32	21
0520	Mopla, minimum		96	.083		15	3.82		18.82	22.50
0530	Average		96	.083		15.25	3.82		19.07	22.50
0540	Maximum		96	.083		15.50	3.82		19.32	23
0550	Oak, for bending rail, minimum		48	.167		22	7.65		29.65	36
0560	Average		48	.167		25	7.65		32.65	39.50
0570	Maximum		48	.167		28	7.65		35.65	43
0580	Maple, for bending rail, minimum		48	.167		25	7.65		32.65	39
0590	Average		48	.167		27	7.65		34.65	42
0600	Maximum		48	.167		29.50	7.65		37.15	44.50
0610	Risers, oak, 3/4" x 8", 36" long		80	.100	Eo.	18	4.59		22.59	27
0620	42" long		80	.100		21	4.59		25.59	30
0630	48" long		80	.100		24	4.59		28.59	33.50
0640	54" long		80	.100		27	4.59		31.59	36.50
0650	60" long		80	.100		30	4.59		34.59	40
0660	72" long		80	.100		36	4.59		40.59	46.50
0670	Poplar, 3/4" x 8", 36" long		80	.100		12	4.59		16.59	20.50
0680	42" long		80	.100		14	4.59		18.59	22.50
0690	48" long		80	.100		16	4.59		20.59	24.50
0700	54" long		80	.100		18	4.59		22.59	27

06 43 Wood Stairs and Railings

06 43 13 – Wood Stairs

06 43 13.40 Wood Stair Parts		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0710	60" long	1 Corp	80	.100	Eq.	20	4.59		24.59	29
0720	72" long		80	.100		24	4.59		28.59	33.50
0730	Pine, 1" x 8", 36" long		80	.100		3.57	4.59		8.16	11.05
0740	42" long		80	.100		4.17	4.59		8.76	11.70
0750	48" long		80	.100		4.76	4.59		9.35	12.35
0760	54" long		80	.100		5.35	4.59		9.94	13
0770	60" long		80	.100		5.95	4.59		10.54	13.65
0780	72" long		80	.100		7.15	4.59		11.74	14.95
0790	Treads, oak, no returns, 1-1/32" x 11-1/2" x 36" long		32	.250		29	11.45		40.45	49.50
0800	42" long		32	.250		34	11.45		45.45	54.50
0810	48" long		32	.250		38.50	11.45		49.95	60
0820	54" long		32	.250		43.50	11.45		54.95	65.50
0830	60" long		32	.250		48.50	11.45		59.95	70.50
0840	72" long		32	.250		58	11.45		69.45	81.50
0850	Mitred return one end, 1-1/32" x 11-1/2" x 36" long		24	.333		52	15.30		67.30	80.50
0860	42" long		24	.333		60.50	15.30		75.80	90
0870	48" long		24	.333		69.50	15.30		84.80	100
0880	54" long		24	.333		78	15.30		93.30	110
0890	60" long		24	.333		86.50	15.30		101.80	119
0900	72" long		24	.333		104	15.30		119.30	138
0910	Mitred return two ends, 1-1/32" x 11-1/2" x 36" long		12	.667		53	30.50		83.50	106
0920	42" long		12	.667		62	30.50		92.50	115
0930	48" long		12	.667		70.50	30.50		101	125
0940	54" long		12	.667		79.50	30.50		110	135
0950	60" long		12	.667		88.50	30.50		119	144
0960	72" long		12	.667		106	30.50		136.50	164
0970	Starting step, oak, 48", bullnose		8	1		195	46		241	286
0980	Double end bullnose		8	1		345	46		391	450
1030	Skirt board, pine, 1" x 10"		55	.145	L.F.	1.55	6.65		8.20	12
1040	1" x 12"		52	.154	"	2.01	7.05		9.06	13.10
1050	Oak landing tread, 1-1/16" thick		54	.148	S.F.	9	6.80		15.80	20.50
1060	Oak cove molding		96	.083	L.F.	1.45	3.82		5.27	7.50
1070	Oak stringer molding		96	.083	"	3.25	3.82		7.07	9.50
1090	Roil bolt, 5/16" x 3-1/2"		48	.167	Eq.	2.75	7.65		10.40	14.85
1100	5/16" x 4-1/2"		48	.167		2.75	7.65		10.40	14.85
1120	Newel post anchor		16	.500		9.75	23		32.75	46.50
1130	Tapered plug, 1/2"		240	.033		1	1.53		2.53	3.46
1140	1"		240	.033		.99	1.53		2.52	3.45

06 43 16 – Wood Railings

06 43 16.10 Wood Handrails and Railings

0010	WOOD HANDRAILS AND RAILINGS									
0020	Custom design, architectural grade, hardwood, minimum	1 Corp	38	.211	L.F.	10	9.65		19.65	26
0100	Maximum		30	.267		62.50	12.25		74.75	88
0300	Stock interior railing with spindles 4" O.C., 4' long		40	.200		41	9.15		50.15	59
0400	8' long	▼	48	.167	▼	41	7.65		48.65	57

06 44 Ornamental Woodwork

06 44 19 – Wood Grilles

06 44 19.10 Grilles		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	GRILLES and panels, hardwood, sanded									
0020	2' x 4' to 4' x 8', custom designs, unfinished, minimum	1 Carp	38	.211	S.F.	61	9.65		70.65	82
0050	Average		30	.267		67.50	12.25		79.75	93.50
0100	Maximum		19	.421		70.50	19.30		89.80	108

06 44 33 – Wood Mantels

06 44 33.10 Fireplace Mantels

0010	FIREPLACE MANTELS									
0015	6" molding, 6' x 3'-6" opening, minimum	1 Carp	5	1.600	Opng.	248	73.50		321.50	385
0100	Maximum		5	1.600		445	73.50		518.50	605
0300	Prefabricated pine, colonial type, stock, deluxe		2	4		1,500	183		1,683	1,925
0400	Economy		3	2.667		690	122		812	950

06 44 33.20 Fireplace Mantel Beam

0010	FIREPLACE MANTEL BEAM									
0020	Rough texture wood, 4" x 8"	1 Carp	36	.222	L.F.	8.30	10.20		18.50	25
0100	4" x 10"		35	.229	"	10.90	10.50		21.40	28
0300	Laminated hardwood, 2-1/4" x 10-1/2" wide, 6' long		5	1.600	Ea.	110	73.50		183.50	234
0400	8' long		5	1.600	"	150	73.50		223.50	278
0600	Brackets for above, rough sawn		12	.667	Pr.	10	30.50		40.50	58
0700	Laminated		12	.667	"	15	30.50		45.50	63.50

06 44 39 – Wood Posts and Columns

06 44 39.10 Decorative Beams

0010	DECORATIVE BEAMS									
0020	Rough sawn cedar, non-load bearing, 4" x 4"	2 Carp	180	.089	L.F.	1.20	4.08		5.28	7.60
0100	4" x 6"		170	.094		1.79	4.32		6.11	8.60
0200	4" x 8"		160	.100		2.39	4.59		6.98	9.75
0300	4" x 10"		150	.107		3.63	4.89		8.52	11.55
0400	4" x 12"		140	.114		4.61	5.25		9.86	13.15
0500	8" x 8"		130	.123		4.78	5.65		10.43	13.95

06 44 39.20 Columns

0010	COLUMNS									
0050	Aluminum, round colonial, 6" diameter	2 Carp	80	.200	V.L.F.	18.60	9.15		27.75	34.50
0100	8" diameter		62.25	.257		21.50	11.80		33.30	41.50
0200	10" diameter		55	.291		25.50	13.35		38.85	48.50
0250	Fir, stock units, hollow round, 6" diameter		80	.200		20	9.15		29.15	36
0300	8" diameter		80	.200		25	9.15		34.15	41
0350	10" diameter		70	.229		32.50	10.50		43	52
0360	12" diameter		65	.246		38.50	11.30		49.80	59.50
0400	Solid turned, to 8' high, 3-1/2" diameter		80	.200		9.10	9.15		18.25	24
0500	4-1/2" diameter		75	.213		13.60	9.80		23.40	30
0600	5-1/2" diameter		70	.229		17.75	10.50		28.25	35.50
0800	Square columns, built-up, 5" x 5"		65	.246		15.50	11.30		26.80	34.50
0900	Solid, 3-1/2" x 3-1/2"		130	.123		9.10	5.65		14.75	18.75
1600	Hemlock, tapered, T & G, 12" diam., 10' high		100	.160		36.50	7.35		43.85	52
1700	16' high		65	.246		71.50	11.30		82.80	96.50
1900	10' high, 14" diameter		100	.160		112	7.35		119.35	134
2000	18' high		65	.246		91	11.30		102.30	117
2200	18" diameter, 12' high		65	.246		163	11.30		174.30	197
2300	20' high		50	.320		115	14.65		129.65	149
2500	20" diameter, 14' high		40	.400		184	18.35		202.35	231
2600	20' high		35	.457		172	21		193	222
2800	For flat pilasters, deduct					33%				

06 44 Ornamental Woodwork

06 44 39 – Wood Posts and Columns

06 44 39.20 Columns		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
3000	For splitting into halves, odd				Eq.	105			105	116
4000	Rough sown cedar posts, 4" x 4"	2 Corp	250	.064	V.L.F.	3.33	2.93		6.26	8.20
4100	4" x 6"		235	.068		7.25	3.12		10.37	12.75
4200	6" x 6"		220	.073		11.70	3.33		15.03	18
4300	8" x 8"	▼	200	.080	▼	20.50	3.67		24.17	28

06 48 Wood Frames

06 48 13 – Exterior Wood Door Frames

06 48 13.10 Exterior Wood Door Frames and Accessories

0010	EXTERIOR WOOD DOOR FRAMES AND ACCESSORIES									
0400	Exterior frame, incl. ext. trim, pine, 5/4 x 4-9/16" deep	2 Corp	375	.043	L.F.	6.60	1.96		8.56	10.30
0420	5-3/16" deep		375	.043		7.80	1.96		9.76	11.60
0440	6-9/16" deep		375	.043		7.90	1.96		9.86	11.70
0600	Ook, 5/4 x 4-9/16" deep		350	.046		16.90	2.10		19	22
0620	5-3/16" deep		350	.046		18.55	2.10		20.65	23.50
0640	6-9/16" deep		350	.046		20	2.10		22.10	25
1000	Sills, 8/4 x 8" deep, ook, no horns		100	.160		6.40	7.35		13.75	18.30
1020	2" horns		100	.160		17.10	7.35		24.45	30
1040	3" horns		100	.160		17.10	7.35		24.45	30
1100	8/4 x 10" deep, ook, no horns		90	.178		6	8.15		14.15	19.20
1120	2" horns		90	.178		22.50	8.15		30.65	37
1140	3" horns		90	.178	▼	22.50	8.15		30.65	37
2000	Exterior, colonial, frame & trim, 3' opng., in-swing, minimum		22	.727	Eq.	355	33.50		388.50	440
2010	Average		21	.762		580	35		615	690
2020	Maximum		20	.800		1,200	36.50		1,236.50	1,375
2100	5'-4" opening, in-swing, minimum		17	.941		420	43		463	530
2120	Maximum		15	1.067		1,200	49		1,249	1,400
2140	Out-swing, minimum		17	.941		420	43		463	530
2160	Maximum		15	1.067		1,200	49		1,249	1,400
2400	6'-0" opening, in-swing, minimum		16	1		420	46		466	535
2420	Maximum		10	1.600		1,200	73.50		1,273.50	1,450
2460	Out-swing, minimum		16	1		420	46		466	535
2480	Maximum		10	1.600	▼	1,200	73.50		1,273.50	1,450
2600	For two sidelights, odd, minimum		30	.533	Opng.	67	24.50		91.50	111
2620	Maximum		20	.800	"	845	36.50		881.50	980
2700	Custom birch frame, 3'-0" opening		16	1	Eq.	230	46		276	325
2750	6'-0" opening		16	1		350	46		396	455
2900	Exterior, modern, plain trim, 3' opng., in-swing, minimum		26	.615		45	28		73	93
2920	Average		24	.667		53.50	30.50		84	106
2940	Maximum	▼	22	.727	▼	61.50	33.50		95	119

06 48 16 – Interior Wood Door Frames

06 48 16.10 Interior Wood Door Jamb and Frames

0010	INTERIOR WOOD DOOR JAMB AND FRAMES									
3000	Interior frame, pine, 11/16" x 3-5/8" deep	2 Corp	375	.043	L.F.	6.10	1.96		8.06	9.70
3020	4-9/16" deep		375	.043		6.25	1.96		8.21	9.85
3200	Ook, 11/16" x 3-5/8" deep		350	.046		9	2.10		11.10	13.15
3220	4-9/16" deep		350	.046		9	2.10		11.10	13.15
3240	5-3/16" deep		350	.046		12.75	2.10		14.85	17.30
3400	Walnut, 11/16" x 3-5/8" deep		350	.046		8.25	2.10		10.35	12.35
3420	4-9/16" deep	▼	350	.046	▼	9	2.10		11.10	13.15

06 48 Wood Frames

06 48 16 – Interior Wood Door Frames

06 48 16.10 Interior Wood Door Jamb and Frames		Crew	Daily	Labor-	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
			Output	Hours			Labor	Equipment		
3440	5-3/16" deep	2 Corp	350	.046	L.F.	9	2.10		11.10	13.15
3600	Pocket door frame		16	1	Eq.	82	46		128	161
3800	Threshold, oak, 5/8" x 3-5/8" deep		200	.080	L.F.	3.56	3.67		7.23	9.55
3820	4-5/8" deep		190	.084		4.13	3.86		7.99	10.50
3840	5-5/8" deep		180	.089		6.50	4.08		10.58	13.45

06 49 Wood Screens and Exterior Wood Shutters

06 49 19 – Exterior Wood Shutters

06 49 19.10 Shutters, Exterior

SHUTTERS, EXTERIOR										
0010	Aluminum, louvered, 1'-4" wide, 3'-0" long	1 Corp	10	.800	Pr.	75	36.50		111.50	139
0400	6'-8" long		9	.889		150	41		191	229
1000	Pine, louvered, primed, each 1'-2" wide, 3'-3" long		10	.800		215	36.50		251.50	294
1100	4'-7" long		10	.800		282	36.50		318.50	365
1500	Each 1'-6" wide, 3'-3" long		10	.800		262	36.50		298.50	345
1600	4'-7" long		10	.800		350	36.50		386.50	440
1620	Cedor, louvered, 1'-2" wide, 5'-7" long		10	.800		335	36.50		371.50	420
1630	Each 1'-4" wide, 2'-2" long		10	.800		176	36.50		212.50	251
1670	4'-3" long		10	.800		296	36.50		332.50	380
1690	5'-11" long		10	.800		390	36.50		426.50	485
1700	Door blinds, 6'-9" long, each 1'-3" wide		9	.889		415	41		456	525
1710	1'-6" wide		9	.889		490	41		531	605
1720	Cedor, solid roised panel, each 1'-4" wide, 3'-3" long		10	.800		335	36.50		371.50	420
1740	4'-3" long		10	.800		415	36.50		451.50	510
1770	5'-11" long		10	.800		550	36.50		586.50	660
1800	Door blinds, 6'-9" long, each 1'-3" wide		9	.889		415	41		456	525
1900	1'-6" wide		9	.889		490	41		531	605
2500	Polystyrene, solid roised panel, each 1'-4" wide, 3'-3" long		10	.800		72	36.50		108.50	136
2700	4'-7" long		10	.800		109	36.50		145.50	177
4500	Polystyrene, louvered, each 1'-2" wide, 3'-3" long		10	.800		65	36.50		101.50	128
4750	5'-3" long		10	.800		102	36.50		138.50	169
6000	Vinyl, louvered, each 1'-2" x 4'-7" long		10	.800		88	36.50		124.50	154
6200	Each 1'-4" x 6'-8" long		9	.889		126	41		167	202

06 51 Structural Plastic Shapes and Plates

06 51 13 – Plastic Lumber

06 51 13.10 Recycled Plastic Lumber

RECYCLED PLASTIC LUMBER										
4000	Sheeting, recycled plastic, black or white, 4' x 8' x 1/8"		2 Corp	1100	.015	S.F.	1.58	.67	2.25	2.77
4010	4' x 8' x 3/16"			1100	.015		2.27	.67	2.94	3.53
4020	4' x 8' x 1/4"			950	.017		2.36	.77	3.13	3.79
4030	4' x 8' x 3/8"			950	.017		3.67	.77	4.44	5.25
4040	4' x 8' x 1/2"			900	.018		4.85	.82	5.67	6.60
4050	4' x 8' x 5/8"			900	.018		6.55	.82	7.37	8.45
4060	4' x 8' x 3/4"		↓	850	.019	↓	8.25	.86	9.11	10.45
4070	Add for colors					Eq.	5%			
8500	100% recycled plastic, vor colors, NLB, 2" x 2"					L.F.	1.76		1.76	1.94
8510	2" x 4"						3.67		3.67	4.04
8520	2" x 6"						5.75		5.75	6.35

06 51 Structural Plastic Shapes and Plates

06 51 13 – Plastic Lumber

06 51 13.10 Recycled Plastic Lumber				Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
8530	2" x 8"	G					L.F.	7.90			7.90	8.70
8540	2" x 10"	G						11.50			11.50	12.65
8550	5/4" x 4"	G						4.26			4.26	4.69
8560	5/4" x 6"	G						5.05			5.05	5.55
8570	1" x 6"	G						2.86			2.86	3.15
8580	1/2" x 8"	G						3.41			3.41	3.75
8590	2" x 10" T & G	G						11.50			11.50	12.65
8600	3" x 10" T & G	G						13.65			13.65	15
8610	Add for premium colors	G					▼	20%				

06 52 Plastic Structural Assemblies

06 52 10 – Fiberglass Structural Assemblies

06 52 10.10 Castings, Fiberglass

0010	CASTINGS, FIBERGLASS											
0100	Angle, 1" x 1" x 1/8" thick		2 Sswk	240	.067	L.F.		2.25	3.41		5.66	8.50
0120	3" x 3" x 1/4" thick			200	.080			7.30	4.09		11.39	15.20
0140	4" x 4" x 1/4" thick			200	.080			9.15	4.09		13.24	17.25
0160	4" x 4" x 3/8" thick			200	.080			13.60	4.09		17.69	22
0180	6" x 6" x 1/2" thick			160	.100	▼		33	5.10		38.10	45.50
1000	Flat sheet, 1/8" thick			140	.114	S.F.		6.60	5.85		12.45	17.55
1020	1/4" thick			120	.133			11.85	6.80		18.65	25
1040	3/8" thick			100	.160			17.40	8.20		25.60	33.50
1060	1/2" thick			80	.200			21	10.20		31.20	41
2000	Handrail, 42" high, 2" diam. rails pickets 5' O.C.			32	.500	L.F.		53.50	25.50		79	104
3000	Round bar, 1/4" diam.			240	.067			.46	3.41		3.87	6.50
3020	1/2" diam.			200	.080			1.32	4.09		5.41	8.65
3040	3/4" diam.			200	.080			3.58	4.09		7.67	11.15
3060	1" diam.			160	.100			6.10	5.10		11.20	15.70
3080	1-1/4" diam.			160	.100			11.30	5.10		16.40	21.50
3100	1-1/2" diam.			140	.114			15.50	5.85		21.35	27.50
3500	Round tube, 1" diam. x 1/8" thick			240	.067			2.40	3.41		5.81	8.65
3520	2" diam. x 1/4" thick			200	.080			8.35	4.09		12.44	16.35
3540	3" diam. x 1/4" thick			160	.100			10.60	5.10		15.70	20.50
4000	Square bar, 1/2" square			240	.067			4.18	3.41		7.59	10.60
4020	1" square			200	.080			5.70	4.09		9.79	13.50
4040	1-1/2" square			160	.100			10.95	5.10		16.05	21
4500	Square tube, 1" x 1" x 1/8" thick			240	.067			2.77	3.41		6.18	9.05
4520	2" x 2" x 1/8" thick			200	.080			5.70	4.09		9.79	13.50
4540	3" x 3" x 1/4" thick			160	.100			16	5.10		21.10	26.50
5000	Threaded rod, 3/8" diam.			320	.050			4.11	2.56		6.67	9.05
5020	1/2" diam.			320	.050			4.75	2.56		7.31	9.75
5040	5/8" diam.			280	.057			5.20	2.92		8.12	10.90
5060	3/4" diam.			280	.057			6	2.92		8.92	11.75
6000	Wide flange beam, 4" x 4" x 1/4" thick			120	.133			12.35	6.80		19.15	25.50
6020	6" x 6" x 1/4" thick			100	.160			20.50	8.20		28.70	37
6040	8" x 8" x 3/8" thick			80	.200			36	10.20		46.20	57.50

06 52 10.20 Fiberglass Stair Treads

0010	FIBERGLASS STAIR TREADS											
0100	24" wide		2 Sswk	52	.308	Ea.		29.50	15.70		45.20	60.50
0140	30" wide			52	.308			36.50	15.70		52.20	68.50
0180	36" wide			52	.308			44	15.70		59.70	76.50

06 52 Plastic Structural Assemblies

06 52 10 – Fiberglass Structural Assemblies

06 52 10.20 Fiberglass Stair Treads		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0220	42" wide	2 Sswk	52	.308	Ea.	51.50	15.70		67.20	84.50

06 52 10.30 Fiberglass Grating

0010	FIBERGLASS GRATING									
0100	Molded, green (for mod. corrosive environment)									
0140	1" x 4" mesh, 1" thick	2 Sswk	400	.040	S.F.	10.65	2.04		12.69	15.30
0180	1-1/2" square mesh, 1" thick		400	.040		18.65	2.04		20.69	24
0220	1-1/4" thick		400	.040		11.90	2.04		13.94	16.70
0260	1-1/2" thick		400	.040		26	2.04		28.04	32.50
0300	2" square mesh, 2" thick	↓	320	.050	↓	24.50	2.56		27.06	31.50
1000	Orange (for highly corrosive environment)									
1040	1" x 4" mesh, 1" thick	2 Sswk	400	.040	S.F.	14.75	2.04		16.79	19.80
1080	1-1/2" square mesh, 1" thick		400	.040		19.55	2.04		21.59	25
1120	1-1/4" thick		400	.040		20.50	2.04		22.54	26
1160	1-1/2" thick		400	.040		22	2.04		24.04	27.50
1200	2" square mesh, 2" thick	↓	320	.050	↓	26	2.56		28.56	33.50
3000	Pultruded, green (for mod. corrosive environment)									
3040	1" O.C. bar spacing, 1" thick	2 Sswk	400	.040	S.F.	17.30	2.04		19.34	22.50
3080	1-1/2" thick		320	.050		18.30	2.56		20.86	24.50
3120	1-1/2" O.C. bar spacing, 1" thick		400	.040		14.20	2.04		16.24	19.20
3160	1-1/2" thick	↓	400	.040	↓	16.80	2.04		18.84	22
4000	Grating support legs, fixed height, no base				Ea.	45.50			45.50	50
4040	With base					41			41	45
4080	Adjustable to 60"				↓	62			62	68.50

06 52 10.40 Fiberglass Floor Grating

0010	FIBERGLASS FLOOR GRATING									
0100	Reinforced polyester, fire retardant, 1" x 4" grid, 1" thick	E-4	510	.063	S.F.	14.95	3.24	.28	18.47	22.50
0200	1-1/2" x 6" mesh, 1-1/2" thick		500	.064		17.50	3.30	.28	21.08	25.50
0300	With grit surface, 1-1/2" x 6" grid, 1-1/2" thick	↓	500	.064	↓	17.85	3.30	.28	21.43	26

06 63 Plastic Railings

06 63 10 – Plastic (PVC) Railings

06 63 10.10 Plastic Railings

0010	PLASTIC RAILINGS									
0100	Horizontal PVC handrail with balusters, 3-1/2" wide, 36" high	1 Corp	96	.083	L.F.	25	3.82		28.82	33.50
0150	42" high		96	.083		28	3.82		31.82	37
0200	Angled PVC handrail with balusters, 3-1/2" wide, 36" high		72	.111		28.50	5.10		33.60	39
0250	42" high		72	.111		31.50	5.10		36.60	43
0300	Post sleeve for 4 x 4 post		96	.083	↓	14	3.82		17.82	21.50
0400	Post cap for 4 x 4 post, flat profile		48	.167	Ea.	13.90	7.65		21.55	27
0450	Newel post style profile		48	.167		23.50	7.65		31.15	38
0500	Raised carbeled profile		48	.167		28.50	7.65		36.15	43
0550	Post base trim for 4 x 4 post		96	.083		18.25	3.82		22.07	26

06 65 Plastic Simulated Wood Trim

06 65 10 – PVC Trim

06 65 10.10 PVC Trim, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	PVC TRIM, EXTERIOR									
0100	Cornerboards, 5/4" x 6" x 6"	1 Corp	240	.033	L.F.	8.90	1.53		10.43	12.15
0110	Door/window casing, 1" x 4"		200	.040		1.35	1.83		3.18	4.32
0120	1" x 6"		200	.040		2.12	1.83		3.95	5.15
0130	1" x 8"		195	.041		2.80	1.88		4.68	6
0140	1" x 10"		195	.041		3.55	1.88		5.43	6.80
0150	1" x 12"		190	.042		4.34	1.93		6.27	7.75
0160	5/4" x 4"		195	.041		1.72	1.88		3.60	4.79
0170	5/4" x 6"		195	.041		2.72	1.88		4.60	5.90
0180	5/4" x 8"		190	.042		3.57	1.93		5.50	6.90
0190	5/4" x 10"		190	.042		4.57	1.93		6.50	8.05
0200	5/4" x 12"		185	.043		5	1.98		6.98	8.55
0210	Fascio, 1" x 4"		250	.032		1.35	1.47		2.82	3.75
0220	1" x 6"		250	.032		2.12	1.47		3.59	4.59
0230	1" x 8"		225	.036		2.80	1.63		4.43	5.60
0240	1" x 10"		225	.036		3.55	1.63		5.18	6.45
0250	1" x 12"		200	.040		4.34	1.83		6.17	7.60
0260	5/4" x 4"		240	.033		1.72	1.53		3.25	4.25
0270	5/4" x 6"		240	.033		2.72	1.53		4.25	5.35
0280	5/4" x 8"		215	.037		3.57	1.71		5.28	6.55
0290	5/4" x 10"		215	.037		4.57	1.71		6.28	7.70
0300	5/4" x 12"		190	.042		5	1.93		6.93	8.50
0310	Frieze, 1" x 4"		250	.032		1.35	1.47		2.82	3.75
0320	1" x 6"		250	.032		2.12	1.47		3.59	4.59
0330	1" x 8"		225	.036		2.80	1.63		4.43	5.60
0340	1" x 10"		225	.036		3.55	1.63		5.18	6.45
0350	1" x 12"		200	.040		4.34	1.83		6.17	7.60
0360	5/4" x 4"		240	.033		1.72	1.53		3.25	4.25
0370	5/4" x 6"		240	.033		2.72	1.53		4.25	5.35
0380	5/4" x 8"		215	.037		3.57	1.71		5.28	6.55
0390	5/4" x 10"		215	.037		4.57	1.71		6.28	7.70
0400	5/4" x 12"		190	.042		5	1.93		6.93	8.50
0410	Roke, 1" x 4"		200	.040		1.35	1.83		3.18	4.32
0420	1" x 6"		200	.040		2.12	1.83		3.95	5.15
0430	1" x 8"		190	.042		2.80	1.93		4.73	6.05
0440	1" x 10"		190	.042		3.55	1.93		5.48	6.90
0450	1" x 12"		180	.044		4.34	2.04		6.38	7.90
0460	5/4" x 4"		195	.041		1.72	1.88		3.60	4.79
0470	5/4" x 6"		195	.041		2.72	1.88		4.60	5.90
0480	5/4" x 8"		185	.043		3.57	1.98		5.55	7
0490	5/4" x 10"		185	.043		4.57	1.98		6.55	8.10
0500	5/4" x 12"		175	.046		5	2.10		7.10	8.75
0510	Roke trim, 1" x 4"		225	.036		1.35	1.63		2.98	4.01
0520	1" x 6"		225	.036		2.12	1.63		3.75	4.85
0560	5/4" x 4"		220	.036		1.72	1.67		3.39	4.46
0570	5/4" x 6"		220	.036		2.72	1.67		4.39	5.55
0610	Soffit, 1" x 4"	2 Corp	420	.038		1.35	1.75		3.10	4.19
0620	1" x 6"		420	.038		2.12	1.75		3.87	5.05
0630	1" x 8"		420	.038		2.80	1.75		4.55	5.80
0640	1" x 10"		400	.040		3.55	1.83		5.38	6.75
0650	1" x 12"		400	.040		4.34	1.83		6.17	7.60
0660	5/4" x 4"		410	.039		1.72	1.79		3.51	4.65
0670	5/4" x 6"		410	.039		2.72	1.79		4.51	5.75

06 65 Plastic Simulated Wood Trim

06 65 10 – PVC Trim

06 65 10.10 PVC Trim, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0680	5/4" x 8"	2 Carp	410	.039	L.F.	3.57	1.79		5.36	6.70
0690	5/4" x 10"		390	.041		4.57	1.88		6.45	7.95
0700	5/4" x 12"		390	.041		5	1.88		6.88	8.40

Estimating Tips

07 10 00 Dampproofing and Waterproofing

- Be sure of the job specifications before pricing this subdivision. The difference in cost between waterproofing and dampproofing can be great. Waterproofing will hold back standing water. Dampproofing prevents the transmission of water vapor. Also included in this section are vapor retarding membranes.

07 20 00 Thermal Protection

- Insulation and fireproofing products are measured by area, thickness, volume or R-value. Specifications may give only what the specific R-value should be in a certain situation. The estimator may need to choose the type of insulation to meet that R-value.

07 30 00 Steep Slope Roofing

07 40 00 Roofing and Siding Panels

- Many roofing and siding products are bought and sold by the square. One square is equal to an area that measures 100 square feet.

This simple change in unit of measure could create a large error if the estimator is not observant. Accessories necessary for a complete installation must be figured into any calculations for both material and labor.

07 50 00 Membrane Roofing

07 60 00 Flashing and Sheet Metal

07 70 00 Roofing and Wall Specialties and Accessories

- The items in these subdivisions compose a roofing system. No one component completes the installation, and all must be estimated. Built-up or single-ply membrane roofing systems are made up of many products and installation trades. Wood blocking at roof perimeters or penetrations, parapet coverings, reglets, roof drains, gutters, downspouts, sheet metal flashing, skylights, smoke vents, and roof hatches all need to be considered along with the roofing material. Several different installation trades will need to work together on the roofing system. Inherent difficulties in the scheduling and coordination of various trades must be accounted for when estimating labor costs.

07 90 00 Joint Protection

- To complete the weather-tight shell, the sealants and caulking must be estimated. Where different materials meet—at expansion joints, at flashing penetrations, and at hundreds of other locations throughout a construction project—they provide another line of defense against water penetration. Often, an entire system is based on the proper location and placement of caulking or sealants. The detailed drawings that are included as part of a set of architectural plans show typical locations for these materials. When caulking or sealants are shown at typical locations, this means the estimator must include them for all the locations where this detail is applicable. Be careful to keep different types of sealants separate, and remember to consider backer rods and primers if necessary.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

07 01 Operation and Maint. of Thermal and Moisture Protection

07 01 50 – Maintenance of Membrane Roofing

07 01 50.10 Roof Coatings		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 ROOF COATINGS							Labor	Equipment		
0012	Asphalt, brush grade, material only				Gal.	9.15			9.15	10.10
0200	Asphalt base; fibered aluminum coating					7.65			7.65	8.40
0300	Asphalt primer, 5 gallon					7.60			7.60	8.35
0600	Coal tar pitch, 200 lb. barrels				Ton	1,525			1,525	1,700
0700	Tar roof cement, 5 gal. lats				Gal.	11.55			11.55	12.70
0800	Glass fibered roof & patching cement, 5 gallon				"	7.65			7.65	8.40
0900	Reinforcing glass membrane, 450 S.F./roll				Ea.	59.50			59.50	65.50
1000	Neoprene roof coating, 5 gal., 2 gal./sq.				Gal.	30.50			30.50	33.50
1100	Roof patch & flashing cement, 5 gallon					8.30			8.30	9.10
1200	Roof resaturant, glass fibered, 3 gal./sq.					8.85			8.85	9.75

07 01 90 – Maintenance of Joint Protection

07 01 90.81 Joint Sealant Replacement

0010 JOINT SEALANT REPLACEMENT										
0050	Control joints in concrete floors/slabs									
0100	Option 1 for joints with hard dry sealant									
0110	Step 1: Sawcut to remove 95% of old sealant									
0112	1/4" wide x 1/2" deep, with single saw blade	C-27	4800	.003	L.F.	.02	.15	.04	.21	.28
0114	3/8" wide x 3/4" deep, with single saw blade		4000	.004		.03	.18	.04	.25	.34
0116	1/2" wide x 1" deep, with double saw blades		3600	.004		.06	.20	.05	.31	.41
0118	3/4" wide x 1-1/2" deep, with double saw blades		3200	.005		.13	.22	.05	.40	.53
0120	Step 2: Water blast joint faces and edges	C-29	2500	.003			.12	.03	.15	.21
0130	Step 3: Air blast joint faces and edges	C-28	2000	.004			.18	.01	.19	.27
0140	Step 4: Sand blast joint faces and edges	E-11	2000	.016			.66	.12	.78	1.23
0150	Step 5: Air blast joint faces and edges	C-28	2000	.004			.18	.01	.19	.27
0200	Option 2 for joints with soft pliable sealant									
0210	Step 1: Plow joint with rectangular blade	B-62	2600	.009	L.F.		.37	.07	.44	.64
0220	Step 2: Sawcut to re-face joint faces									
0222	1/4" wide x 1/2" deep, with single saw blade	C-27	2400	.007	L.F.	.02	.29	.07	.38	.53
0224	3/8" wide x 3/4" deep, with single saw blade		2000	.008		.04	.35	.09	.48	.67
0226	1/2" wide x 1" deep, with double saw blades		1800	.009		.08	.39	.10	.57	.78
0228	3/4" wide x 1-1/2" deep, with double saw blades		1600	.010		.17	.44	.11	.72	.95
0230	Step 3: Water blast joint faces and edges	C-29	2500	.003			.12	.03	.15	.21
0240	Step 4: Air blast joint faces and edges	C-28	2000	.004			.18	.01	.19	.27
0250	Step 5: Sand blast joint faces and edges	E-11	2000	.016			.66	.12	.78	1.23
0260	Step 6: Air blast joint faces and edges	C-28	2000	.004			.18	.01	.19	.27
0290	For saw cutting new control joints, see Section 03 15 16.20									
8910	For backer rod, see Section 07 91 23.10									
8920	For joint sealant, see Sections 03 15 16.30 or 07 92 13.20									

07 05 Common Work Results for Thermal and Moisture Protection

07 05 05 – Selective Demolition

07 05 05.10 Selective Demo., Thermal and Moist. Protection

0010 SELECTIVE DEMO., THERMAL AND MOISTURE PROTECTION										
0020	Caulking/sealant, to 1" x 1" joint	R024119-10	1 Clab	600	.013	L.F.	.49		.49	.75
0120	Downspouts, including hangers			350	.023	"	.84		.84	1.29
0220	Flashing, sheet metal			290	.028	S.F.	1.01		1.01	1.56
0420	Gutters, aluminum or wood, edge hung			240	.033	L.F.	1.22		1.22	1.88
0520	Built-in			100	.080	"	2.93		2.93	4.52
0620	Insulation, air/vapor barrier			3500	.002	S.F.	.08		.08	.13

07 05 Common Work Results for Thermal and Moisture Protection

07 05 05 – Selective Demolition

07 05 05.10 Selective Demo., Thermal and Moist. Protection		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0670	Botts or blonkets	1 Clob	1400	.006	C.F.		.21		.21	.32
0720	Foomed or sroyed in ploc	2 Clob	1000	.016	B.F.		.59		.59	.90
0770	Loose fitting	1 Clob	3000	.003	C.F.		.10		.10	.15
0870	Rigid board		3450	.002	B.F.		.09		.09	.13
1120	Roll roofing, cold adhesive		12	.667	Sq.		24.50		24.50	37.50
1170	Roof accessories, adjustable metal chimney flashing		9	.889	Eo.		32.50		32.50	50.50
1325	Plumbing vent flashing		32	.250	"		9.15		9.15	14.15
1375	Ridge vent strip, aluminum		310	.026	L.F.		.95		.95	1.46
1620	Skylight to 10 S.F.		8	1	Eo.		36.50		36.50	56.50
2120	Roof edge, aluminum soffit and fascio		570	.014	L.F.		.51		.51	.79
2170	Concrete coping, up to 12" wide	2 Clob	160	.100			3.67		3.67	5.65
2220	Drip edge	1 Clob	1000	.008			.29		.29	.45
2270	Grovel stop		950	.008			.31		.31	.48
2370	Sheet metal coping, up to 12" wide	▼	240	.033	▼		1.22		1.22	1.88
2470	Roof insulation board, over 2" thick	B-2	7800	.005	B.F.		.19		.19	.29
2520	Up to 2" thick	"	3900	.010	S.F.		.38		.38	.59
2620	Roof ventilation, louvered gable vent	1 Clob	16	.500	Eo.		18.35		18.35	28.50
2670	Remove, roof hatch	G-3	15	2.133			97.50		97.50	149
2675	Rafter vents	1 Clob	960	.008			.31		.31	.47
2720	Soffit vent and/or fascio vent		575	.014	L.F.		.51		.51	.79
2775	Soffit vent strip, aluminum, 3" to 4" wide		160	.050			1.83		1.83	2.83
2820	Roofing accessories, shingle moulding, to 1" x 4"	▼	1600	.005			.18		.18	.28
2870	Cont strip	B-2	2000	.020			.74		.74	1.14
2920	Concrete block walkway	1 Clob	230	.035	▼		1.27		1.27	1.97
3070	Roofing, felt paper, 15#		70	.114	Sq.		4.19		4.19	6.45
3125	#30 felt	▼	30	.267	"		9.75		9.75	15.10
3170	Asphalt shingles, 1 layer	B-2	3500	.011	S.F.		.42		.42	.65
3180	2 layers		1750	.023	"		.85		.85	1.31
3370	Modified bitumen		26	1.538	Sq.		57		57	88
3420	Built-up, no gravel, 3 ply		25	1.600			59.50		59.50	91.50
3470	4 ply		21	1.905	▼		70.50		70.50	109
3620	5 ply		1600	.025	S.F.		.93		.93	1.43
3720	5 ply, with gravel		890	.045			1.67		1.67	2.57
3725	Grovel removal, minimum		5000	.008			.30		.30	.46
3730	Maximum		2000	.020			.74		.74	1.14
3870	Fiberglass sheet		1200	.033			1.23		1.23	1.91
4120	Slate shingles		1900	.021			.78		.78	1.20
4170	Ridge shingles, clay or slate		2000	.020	L.F.		.74		.74	1.14
4320	Single ply membrane, attached at seams		52	.769	Sq.		28.50		28.50	44
4370	Bolstered		75	.533			19.75		19.75	30.50
4420	Fully adhered	▼	39	1.026	▼		38		38	58.50
4550	Roof hatch, 2'-6" x 3'-0"	1 Clob	10	.800	Eo.		29.50		29.50	45
4670	Wood shingles	B-2	2200	.018	S.F.		.67		.67	1.04
4820	Sheet metal roofing	"	2150	.019			.69		.69	1.06
4970	Siding, horizontal wood clapboards	1 Clob	380	.021			.77		.77	1.19
5025	Exterior insulation finish system	"	120	.067			2.44		2.44	3.77
5070	Tempered hardboard, remove and reset	1 Corp	380	.021			.97		.97	1.49
5120	Tempered hardboard sheet siding	"	375	.021	▼		.98		.98	1.51
5170	Metal, corner strips	1 Clob	850	.009	L.F.		.34		.34	.53
5225	Horizontal strips		444	.018	S.F.		.66		.66	1.02
5320	Vertical strips		400	.020			.73		.73	1.13
5520	Wood shingles		350	.023			.84		.84	1.29
5620	Stucco siding		360	.022			.81		.81	1.26

07 05 Common Work Results for Thermal and Moisture Protection

07 05 05 – Selective Demolition

07 05 05.10 Selective Demo., Thermal and Moist. Protection		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5670	Textured plywood	1 Clab	725	.011	S.F.		.40		.40	.62
5720	Vinyl siding		510	.016	▼		.58		.58	.89
5770	Corner strips		900	.009	L.F.		.33		.33	.50
5870	Wood, boards, vertical	▼	400	.020	S.F.		.73		.73	1.13
5920	Waterproofing, protection/drain board	2 Clab	3900	.004	B.F.		.15		.15	.23
5970	Over 1/2" thick		1750	.009	S.F.		.34		.34	.52
6020	To 1/2" thick	▼	2000	.008	"		.29		.29	.45

07 11 Dampproofing

07 11 13 – Bituminous Dampproofing

07 11 13.10 Bituminous Asphalt Coating

0010	BITUMINOUS ASPHALT COATING									
0030	Brushed on, below grade, 1 coat	1 Raft	665	.012	S.F.	.23	.47		.70	1.05
0100	2 coat		500	.016		.46	.63		1.09	1.57
0300	Sprayed on, below grade, 1 coat		830	.010		.23	.38		.61	.89
0400	2 coat	▼	500	.016	▼	.45	.63		1.08	1.56
0500	Asphalt coating, with fibers				Gal.	7.65			7.65	8.40
0600	Troweled on, asphalt with fibers, 1/16" thick	1 Raft	500	.016	S.F.	.33	.63		.96	1.44
0700	1/8" thick		400	.020		.59	.78		1.37	1.98
1000	1/2" thick		350	.023		1.91	.90		2.81	3.62

07 11 16 – Cementitious Dampproofing

07 11 16.20 Cementitious Parging

0010	CEMENTITIOUS PARGING									
0020	Portland cement, 2 coats, 1/2" thick	D-1	250	.064	S.F.	.30	2.64		2.94	4.36
0100	Waterproofed Portland cement, 1/2" thick, 2 coats	"	250	.064	"	3.73	2.64		6.37	8.15

07 12 Built-up Bituminous Waterproofing

07 12 13 – Built-Up Asphalt Waterproofing

07 12 13.20 Membrane Waterproofing

0010	MEMBRANE WATERPROOFING									
0012	On slabs, 1 ply, felt, mapped	G-1	3000	.019	S.F.	.41	.68	.18	1.27	1.81
0100	On slabs, 1 ply, glass fiber fabric, mapped		2100	.027		.46	.98	.26	1.70	2.45
0300	On slabs, 2 ply, felt, mapped		2500	.022		.83	.82	.22	1.87	2.54
0400	On slabs, 2 ply, glass fiber fabric, mapped		1650	.034		1.01	1.24	.34	2.59	3.59
0600	On slabs, 3 ply, felt, mapped		2100	.027		1.24	.98	.26	2.48	3.31
0700	On slabs, 3 ply, glass fiber fabric, mapped	▼	1550	.036		1.37	1.32	.36	3.05	4.14
0710	Asphaltic hardboard protection board, 1/8" thick	2 Raft	500	.032		.62	1.25		1.87	2.81
1000	1/4" EPS membrane protection board		3500	.005		.33	.18		.51	.66
1050	3/8" thick		3500	.005		.36	.18		.54	.70
1060	1/2" thick		3500	.005		.39	.18		.57	.73
1070	Fiberglass fabric, black, 20/10 mesh		116	.138	Sq.	14.70	5.40		20.10	25.50

07 13 Sheet Waterproofing

07 13 53 – Elastomeric Sheet Waterproofing

07 13 53.10 Elastomeric Sheet Waterproofing and Access.		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 ELASTOMERIC SHEET WATERPROOFING AND ACCESS.							Labor	Equipment		
0090	EPDM, plain, 45 mils thick	2 Rofc	580	.028	S.F.	1.40	1.08		2.48	3.38
0100	60 mils thick		570	.028		1.52	1.10		2.62	3.54
0300	Nylon reinforced sheets, 45 mils thick		580	.028		1.58	1.08		2.66	3.58
0400	60 mils thick	▼	570	.028	▼	1.67	1.10		2.77	3.70
0600	Vulconizing splicing tope for above, 2" wide				C.L.F.	75			75	82.50
0700	4" wide				"	144			144	158
0900	Adhesive, bonding, 60 S.F. per gal.				Gol.	31.50			31.50	35
1000	Splicing, 75 S.F. per gal.				"	37			37	40.50
1200	Neoprene sheets, plain, 45 mils thick	2 Rofc	580	.028	S.F.	1.76	1.08		2.84	3.78
1300	60 mils thick		570	.028		2.23	1.10		3.33	4.32
1500	Nylon reinforced, 45 mils thick		580	.028		2	1.08		3.08	4.04
1600	60 mils thick		570	.028		3.03	1.10		4.13	5.20
1800	120 mils thick	▼	500	.032	▼	6.05	1.25		7.30	8.80
1900	Adhesive, splicing, 150 S.F. per gal. per coat				Gol.	37			37	40.50
2100	Fiberglass reinforced, fluid applied, 1/8" thick	2 Rofc	500	.032	S.F.	1.63	1.25		2.88	3.92
2200	Polyethylene ond rubberized aspholt sheets, 60 mils thick		550	.029		.76	1.14		1.90	2.78
2400	Polyvinyl chloride sheets, plain, 10 mils thick		580	.028		.14	1.08		1.22	1.99
2500	20 mils thick		570	.028		.18	1.10		1.28	2.07
2700	30 mils thick		560	.029		.25	1.12		1.37	2.18
3000	Adhesives, trowel grode, 40-100 S.F. per gal.				Gol.	23			23	25.50
3100	Brush grode, 100-250 S.F. per gal.				"	20.50			20.50	23
3300	Bitumen modified polyurethone, fluid applied, 55 mils thick	2 Rofc	665	.024	S.F.	.89	.94		1.83	2.58

07 16 Cementitious and Reactive Waterproofing

07 16 16 – Crystalline Waterproofing

07 16 16.20 Cementitious Waterproofing

0010	CEMENTITIOUS WATERPROOFING												
0020	1/8" application, sprayed on	G-2A	1000	.024	S.F.	.60	.84	.74				2.18	2.86
0050	4 coat cementitious metallic slurry	1 Cefi	1.20	6.667	C.S.F.	30.50	294					324.50	470

07 17 Bentonite Waterproofing

07 17 13 – Bentonite Panel Waterproofing

07 17 13.10 Bentonite

0010	BENTONITE												
0020	Panels, 4' x 4', 3/16" thick	1 Rofc	625	.013	S.F.	1.46	.50					1.96	2.46
0100	Rolls, 3/8" thick, with geotextile fabric both sides	"	550	.015	"	1.50	.57					2.07	2.62
0300	Gronulor bentonite, 50 lb. bags (.625 C.F.)				Bog	15.10						15.10	16.60
0400	3/8" thick, troweled on	1 Rofc	475	.017	S.F.	.75	.66					1.41	1.95
0500	Drain board, expanded polystyrene, 1-1/2" thick	1 Rohe	1600	.005		.36	.15					.51	.65
0510	2" thick		1600	.005		.48	.15					.63	.78
0520	3" thick		1600	.005		.72	.15					.87	1.04
0530	4" thick		1600	.005		.96	.15					1.11	1.31
0600	With filter fabric, 1-1/2" thick		1600	.005		.42	.15					.57	.72
0625	2" thick		1600	.005		.54	.15					.69	.85
0650	3" thick		1600	.005		.78	.15					.93	1.11
0675	4" thick	▼	1600	.005	▼	1.02	.15					1.17	1.38

07 19 Water Repellents

07 19 19 – Silicone Water Repellents

07 19 19.10 Silicone Based Water Repellents		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010	SILICONE BASED WATER REPELLENTS						Labor	Equipment		
0020	Water base liquid, roller applied	2 Rafc	7000	.002	S.F.	.49	.09		.58	.69
0200	Silicone or stearate, sprayed on CMU, 1 coat	1 Rafc	4000	.002		.35	.08		.43	.52
0300	2 coats	"	3000	.003		.71	.10		.81	.96

07 21 Thermal Insulation

07 21 13 – Board Insulation

07 21 13.10 Rigid Insulation

0010	RIGID INSULATION, for walls									
0040	Fiberglass, 1.5#/C.F., unfaced, 1" thick, R4.1	G	1 Corp	1000	.008	S.F.	.27	.37	.64	.87
0060	1-1/2" thick, R6.2	G		1000	.008		.40	.37	.77	1.01
0080	2" thick, R8.3	G		1000	.008		.45	.37	.82	1.07
0120	3" thick, R12.4	G		800	.010		.56	.46	1.02	1.33
0370	3#/C.F., unfaced, 1" thick, R4.3	G		1000	.008		.52	.37	.89	1.14
0390	1-1/2" thick, R6.5	G		1000	.008		.78	.37	1.15	1.43
0400	2" thick, R8.7	G		890	.009		1.05	.41	1.46	1.80
0420	2-1/2" thick, R10.9	G		800	.010		1.10	.46	1.56	1.92
0440	3" thick, R13	G		800	.010		1.59	.46	2.05	2.46
0520	Foil faced, 1" thick, R4.3	G		1000	.008		.90	.37	1.27	1.56
0540	1-1/2" thick, R6.5	G		1000	.008		1.35	.37	1.72	2.06
0560	2" thick, R8.7	G		890	.009		1.69	.41	2.10	2.50
0580	2-1/2" thick, R10.9	G		800	.010		1.98	.46	2.44	2.89
0600	3" thick, R13	G		800	.010		2.18	.46	2.64	3.11
1600	Isocyanurate, 4' x 8' sheet, foil faced, both sides									
1610	1/2" thick	G	1 Corp	800	.010	S.F.	.29	.46	.75	1.03
1620	5/8" thick	G		800	.010		.32	.46	.78	1.06
1630	3/4" thick	G		800	.010		.33	.46	.79	1.07
1640	1" thick	G		800	.010		.51	.46	.97	1.27
1650	1-1/2" thick	G		730	.011		.63	.50	1.13	1.47
1660	2" thick	G		730	.011		.79	.50	1.29	1.65
1670	3" thick	G		730	.011		1.78	.50	2.28	2.74
1680	4" thick	G		730	.011		2	.50	2.50	2.98
1700	Perlite, 1" thick, R2.77	G		800	.010		.36	.46	.82	1.11
1750	2" thick, R5.55	G		730	.011		.72	.50	1.22	1.57
1900	Extruded polystyrene, 25 PSI compressive strength, 1" thick, R5	G		800	.010		.52	.46	.98	1.28
1940	2" thick R10	G		730	.011		1.05	.50	1.55	1.94
1960	3" thick, R15	G		730	.011		1.49	.50	1.99	2.42
2100	Expanded polystyrene, 1" thick, R3.85	G		800	.010		.24	.46	.70	.97
2120	2" thick, R7.69	G		730	.011		.48	.50	.98	1.31
2140	3" thick, R11.49	G		730	.011		.72	.50	1.22	1.57

07 21 13.13 Foam Board Insulation

0010	FOAM BOARD INSULATION									
0600	Polystyrene, expanded, 1" thick, R4	G	1 Corp	680	.012	S.F.	.24	.54	.78	1.09
0700	2" thick, R8	G	"	675	.012	"	.48	.54	1.02	1.37

07 21 16 – Blanket Insulation

07 21 16.10 Blanket Insulation for Floors/Ceilings

0010	BLANKET INSULATION FOR FLOORS/CEILINGS									
0020	Including spring type wire fasteners									
2000	Fiberglass, blankets or batts, paper or foil backing									
2100	3-1/2" thick, R13	G	1 Corp	700	.011	S.F.	.37	.52	.89	1.22

07 21 Thermal Insulation

07 21 16 – Blanket Insulation

07 21 16.10 Blanket Insulation for Floors/Ceilings				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
2150	6-1/4" thick, R19	G	1 Carp	600	.013	S.F.		.48	.61		1.09	1.47
2210	9-1/2" thick, R30	G		500	.016			.70	.73		1.43	1.90
2220	12" thick, R38	G		475	.017			.89	.77		1.66	2.17
3000	Unfaced, 3-1/2" thick, R13	G		600	.013			.32	.61		.93	1.29
3010	6-1/4" thick, R19	G		500	.016			.37	.73		1.10	1.54
3020	9-1/2" thick, R30	G		450	.018			.60	.82		1.42	1.92
3030	12" thick, R38	G		425	.019			.75	.86		1.61	2.16

07 21 16.20 Blanket Insulation for Walls

0010 BLANKET INSULATION FOR WALLS												
0020	Kraft faced fiberglass, 3-1/2" thick, R11, 15" wide	G	1 Carp	1350	.006	S.F.		.26	.27		.53	.71
0030	23" wide	G		1600	.005			.26	.23		.49	.64
0060	R13, 11" wide	G		1150	.007			.31	.32		.63	.83
0080	15" wide	G		1350	.006			.31	.27		.58	.76
0100	23" wide	G		1600	.005			.31	.23		.54	.69
0110	R15, 11" wide	G		1150	.007			.51	.32		.83	1.05
0120	15" wide	G		1350	.006			.51	.27		.78	.98
0130	23" wide	G		1600	.005			.51	.23		.74	.91
0140	6" thick, R19, 11" wide	G		1150	.007			.42	.32		.74	.95
0160	15" wide	G		1350	.006			.42	.27		.69	.88
0180	23" wide	G		1600	.005			.42	.23		.65	.81
0182	R21, 11" wide	G		1150	.007			.60	.32		.92	1.15
0184	15" wide	G		1350	.006			.60	.27		.87	1.08
0186	23" wide	G		1600	.005			.60	.23		.83	1.01
0188	9" thick, R30, 11" wide	G		985	.008			.70	.37		1.07	1.34
0200	15" wide	G		1150	.007			.70	.32		1.02	1.26
0220	23" wide	G		1350	.006			.70	.27		.97	1.19
0230	12" thick, R38, 11" wide	G		985	.008			.89	.37		1.26	1.55
0240	15" wide	G		1150	.007			.89	.32		1.21	1.47
0260	23" wide	G		1350	.006			.89	.27		1.16	1.40
0410	Foil faced fiberglass, 3-1/2" thick, R13, 11" wide	G		1150	.007			.44	.32		.76	.97
0420	15" wide	G		1350	.006			.44	.27		.71	.90
0440	23" wide	G		1600	.005			.44	.23		.67	.83
0442	R15, 11" wide	G		1150	.007			.48	.32		.80	1.02
0444	15" wide	G		1350	.006			.48	.27		.75	.95
0446	23" wide	G		1600	.005			.48	.23		.71	.88
0448	6" thick, R19, 11" wide	G		1150	.007			.57	.32		.89	1.12
0460	15" wide	G		1350	.006			.57	.27		.84	1.05
0480	23" wide	G		1600	.005			.57	.23		.80	.98
0482	R21, 11" wide	G		1150	.007			.60	.32		.92	1.15
0484	15" wide	G		1350	.006			.60	.27		.87	1.08
0486	23" wide	G		1600	.005			.60	.23		.83	1.01
0488	9" thick, R30, 11" wide	G		985	.008			.89	.37		1.26	1.55
0500	15" wide	G		1150	.007			.89	.32		1.21	1.47
0550	23" wide	G		1350	.006			.89	.27		1.16	1.40
0560	12" thick, R38, 11" wide	G		985	.008			1.03	.37		1.40	1.70
0570	15" wide	G		1150	.007			1.03	.32		1.35	1.62
0580	23" wide	G		1350	.006			1.03	.27		1.30	1.55
0620	Unfaced fiberglass, 3-1/2" thick, R13, 11" wide	G		1150	.007			.32	.32		.64	.84
0820	15" wide	G		1350	.006			.32	.27		.59	.77
0830	23" wide	G		1600	.005			.32	.23		.55	.70
0832	R15, 11" wide	G		1150	.007			.46	.32		.78	1
0834	15" wide	G		1350	.006			.46	.27		.73	.93

07 21 Thermal Insulation

07 21 16 – Blanket Insulation

07 21 16.20 Blanket Insulation for Walls				Daily	Labor-			2014 Bare Costs			Total
				Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
0836	23" wide	G	1 Corp	1600	.005	S.F.		.46	.23		.69
0838	6" thick, R19, 11" wide	G		1150	.007			.37	.32		.69
0860	15" wide	G		1150	.007			.37	.32		.69
0880	23" wide	G		1350	.006			.37	.27		.64
0882	R21, 11" wide	G		1150	.007			.50	.32		.82
0886	15" wide	G		1350	.006			.50	.27		.77
0888	23" wide	G		1600	.005			.50	.23		.73
0890	9" thick, R30, 11" wide	G		985	.008			.60	.37		.97
0900	15" wide	G		1150	.007			.60	.32		.92
0920	23" wide	G		1350	.006			.60	.27		.87
0930	12" thick, R38, 11" wide	G		985	.008			.75	.37		1.12
0940	15" wide	G		1000	.008			.75	.37		1.12
0960	23" wide	G		1150	.007			.75	.32		1.07
1300	Wool or ceiling insulation, mineral wool botts										
1320	3-1/2" thick, R15	G	1 Corp	1600	.005	S.F.		.60	.23		.83
1340	5-1/2" thick, R23	G		1600	.005			.94	.23		1.17
1380	7-1/4" thick, R30	G		1350	.006			1.24	.27		1.51
1850	Friction fit wire insulation supports, 16" O.C.			960	.008	Eo.		.06	.38		.44

07 21 19 – Foamed In Place Insulation

07 21 19.10 Masonry Foamed In Place Insulation

0010	MASONRY FOAMED IN PLACE INSULATION										
0100	Amino-plast foam, injected into block core, 6" black	G	G-2A	6000	.004	Ea.		.15	.14	.12	.41
0110	8" black	G		5000	.005			.19	.17	.15	.51
0120	10" black	G		4000	.006			.23	.21	.19	.63
0130	12" black	G		3000	.008			.31	.28	.25	.84
0140	Injected into cavity wall	G		13000	.002	B.F.		.05	.06	.06	.17
0150	Preporation, drill holes into martar joint every 4 VLF, 5/8" dio		1 Clab	960	.008	Eo.			.31		.31
0160	7/8" dio			680	.012				.43		.43
0170	Patch drilled holes, 5/8" diameter			1800	.004			.03	.16		.19
0180	7/8" diameter			1200	.007			.04	.24		.28

07 21 23 – Loose-Fill Insulation

07 21 23.10 Poured Loose-Fill Insulation

0010	POURED LOOSE-FILL INSULATION										
0020	Cellulase fiber, R3.8 per inch	G	1 Corp	200	.040	C.F.		.69	1.83		2.52
0021	4" thick	G		1000	.008	S.F.		.17	.37		.54
0022	6" thick	G		800	.010	"		.28	.46		.74
0080	Fiberglass wool, R4 per inch	G		200	.040	C.F.		.53	1.83		2.36
0081	4" thick	G		600	.013	S.F.		.18	.61		.79
0082	6" thick	G		400	.020	"		.26	.92		1.18
0100	Mineral wool, R3 per inch	G		200	.040	C.F.		.39	1.83		2.22
0101	4" thick	G		600	.013	S.F.		.13	.61		.74
0102	6" thick	G		400	.020	"		.20	.92		1.12
0300	Polystyrene, R4 per inch	G		200	.040	C.F.		2.50	1.83		4.33
0301	4" thick	G		600	.013	S.F.		.83	.61		1.44
0302	6" thick	G		400	.020	"		1.25	.92		2.17
0400	Perlite, R2.78 per inch	G		200	.040	C.F.		5.40	1.83		7.23
0401	4" thick	G		1000	.008	S.F.		1.80	.37		2.17
0402	6" thick	G		800	.010	"		2.70	.46		3.16

07 21 Thermal Insulation

07 21 23 – Loose-Fill Insulation

07 21 23.20 Masonry Loose-Fill Insulation				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	MASONRY LOOSE-FILL INSULATION , vermiculite or perlite											
0100	In cores of concrete block, 4" thick woll, .115 C.F./S.F.		D-1	4800	.003	S.F.		.62	.14		.76	.89
0200	6" thick woll, .175 C.F./S.F.			3000	.005			.95	.22		1.17	1.38
0300	8" thick woll, .258 C.F./S.F.			2400	.007			1.39	.28		1.67	1.95
0400	10" thick woll, .340 C.F./S.F.			1850	.009			1.84	.36		2.20	2.56
0500	12" thick woll, .422 C.F./S.F.		▼	1200	.013	▼		2.28	.55		2.83	3.35
0550	For sond fill, deduct from above							70%				
0600	Poured covity woll, vermiculite or perlite, woter repellont		D-1	250	.064	C.F.		5.40	2.64		8.04	10
0700	Foomed in ploce, urethone in 2-5/8" covity		G-2A	1035	.023	S.F.		1.38	.81	.72	2.91	3.65
0800	For each 1" odded thickness, odd		"	2372	.010	"		.53	.35	.31	1.19	1.50

07 21 26 – Blown Insulation

07 21 26.10 Blown Insulation

0010	BLOWN INSULATION Ceilings, with open access											
0020	Cellulose, 3-1/2" thick, R13		G-4	5000	.005	S.F.		.24	.18	.09	.51	.63
0030	5-3/16" thick, R19			3800	.006			.35	.24	.11	.70	.87
0050	6-1/2" thick, R22			3000	.008			.45	.30	.14	.89	1.12
0100	8-11/16" thick, R30			2600	.009			.61	.34	.16	1.11	1.38
0120	10-7/8" thick, R38			1800	.013			.78	.50	.24	1.52	1.88
1000	Fiberglass, 5.5" thick, R11			3800	.006			.18	.24	.11	.53	.68
1050	6" thick, R12			3000	.008			.26	.30	.14	.70	.90
1100	8.8" thick, R19			2200	.011			.32	.41	.19	.92	1.19
1200	10" thick, R22			1800	.013			.37	.50	.24	1.11	1.44
1300	11.5" thick, R26			1500	.016			.44	.60	.29	1.33	1.72
1350	13" thick, R30			1400	.017			.52	.64	.31	1.47	1.90
1450	16" thick, R38			1145	.021			.66	.78	.37	1.81	2.35
1500	20" thick, R49		▼	920	.026	▼		.87	.97	.46	2.30	2.97

07 21 27 – Reflective Insulation

07 21 27.10 Reflective Insulation Options

0010	REFLECTIVE INSULATION OPTIONS											
0020	Aluminum foil on reinforced scrim		1 Corp	19	.421	C.S.F.		14.20	19.30		33.50	45.50
0100	Reinforced with woven polyolefin			19	.421			22	19.30		41.30	54
0500	With single bubble oir spoce, R8.8			15	.533			26	24.50		50.50	66
0600	With double bubble oir spoce, R9.8		▼	15	.533	▼		29	24.50		53.50	69

07 21 29 – Sprayed Insulation

07 21 29.10 Sprayed-On Insulation

0010	SPRAYED-ON INSULATION											
0020	Fibrous/cementitious, finished woll, 1" thick, R3.7		G-2	2050	.012	S.F.		.29	.45	.07	.81	1.08
0100	Attic, 5.2" thick, R19			1550	.015	"		.51	.60	.09	1.20	1.57
0200	Fiberglass, R4 per inch, verticol			1600	.015	B.F.		.18	.58	.08	.84	1.16
0210	Horizontal		▼	1200	.020	"		.18	.77	.11	1.06	1.48
0300	Closed cell, sroy polyurethane foam, 2 pounds per cubic foot density											
0310	1" thick		G-2A	6000	.004	S.F.		.53	.14	.12	.79	.95
0320	2" thick			3000	.008			1.05	.28	.25	1.58	1.89
0330	3" thick			2000	.012			1.58	.42	.37	2.37	2.83
0335	3-1/2" thick			1715	.014			1.84	.49	.43	2.76	3.31
0340	4" thick			1500	.016			2.10	.56	.49	3.15	3.77
0350	5" thick			1200	.020			2.63	.70	.62	3.95	4.72
0355	5-1/2" thick			1090	.022			2.89	.77	.68	4.34	5.20
0360	6" thick		▼	1000	.024	▼		3.15	.84	.74	4.73	5.65

07 22 Roof and Deck Insulation

07 22 16 – Roof Board Insulation

07 22 16.10 Roof Deck Insulation				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	ROOF DECK INSULATION, fastening excluded											
0020	Fiberboard low density, 1/2" thick R1.39	G	1 Rofc	1300	.006	S.F.		.30	.24		.54	.74
0030	1" thick R2.78	G		1040	.008			.52	.30		.82	1.08
0080	1 1/2" thick R4.17	G		1040	.008			.80	.30		1.10	1.39
0100	2" thick R5.56	G		1040	.008			1.06	.30		1.36	1.68
0110	Fiberboard high density, 1/2" thick R1.3	G		1300	.006			.29	.24		.53	.73
0120	1" thick R2.5	G		1040	.008			.60	.30		.90	1.17
0130	1-1/2" thick R3.8	G		1040	.008			.89	.30		1.19	1.49
0200	Fiberglass, 3/4" thick R2.78	G		1300	.006			.61	.24		.85	1.08
0400	15/16" thick R3.70	G		1300	.006			.81	.24		1.05	1.30
0460	1-1/16" thick R4.17	G		1300	.006			1.01	.24		1.25	1.52
0600	1-5/16" thick R5.26	G		1300	.006			1.37	.24		1.61	1.92
0650	2-1/16" thick R8.33	G		1040	.008			1.45	.30		1.75	2.11
0700	2-7/16" thick R10	G		1040	.008			1.68	.30		1.98	2.36
1650	Perlite, 1/2" thick R1.32	G		1365	.006			.31	.23		.54	.73
1655	3/4" thick R2.08	G		1040	.008			.35	.30		.65	.90
1660	1" thick R2.78	G		1040	.008			.49	.30		.79	1.05
1670	1-1/2" thick R4.17	G		1040	.008			.72	.30		1.02	1.30
1680	2" thick R5.56	G		910	.009			.99	.34		1.33	1.68
1685	2-1/2" thick R6.67	G		910	.009			1.30	.34		1.64	2.02
1690	Tapered for drainoge	G		1040	.008	B.F.		1.01	.30		1.31	1.62
1700	Polyisocyanurate, 2#/C.F. density, 3/4" thick	G		1950	.004	S.F.		.44	.16		.60	.75
1705	1" thick	G		1820	.004			.50	.17		.67	.84
1715	1-1/2" thick	G		1625	.005			.63	.19		.82	1.02
1725	2" thick	G		1430	.006			.79	.22		1.01	1.24
1735	2-1/2" thick	G		1365	.006			1.01	.23		1.24	1.50
1745	3" thick	G		1300	.006			1.22	.24		1.46	1.75
1755	3-1/2" thick	G		1300	.006			1.95	.24		2.19	2.56
1765	Topered for drainoge	G	▼	1820	.004	B.F.		.57	.17		.74	.92
1900	Extruded Polystyrene											
1910	15 PSI compressive strength, 1" thick, R5	G	1 Rofc	1950	.004	S.F.		.53	.16		.69	.85
1920	2" thick, R10	G		1625	.005			.69	.19		.88	1.09
1930	3" thick R15	G		1300	.006			1.38	.24		1.62	1.93
1932	4" thick R20	G		1300	.006			1.86	.24		2.10	2.45
1934	Topered for drainoge	G		1950	.004	B.F.		.56	.16		.72	.89
1940	25 PSI compressive strength, 1" thick R5	G		1950	.004	S.F.		.66	.16		.82	1
1942	2" thick R10	G		1625	.005			1.25	.19		1.44	1.71
1944	3" thick R15	G		1300	.006			1.91	.24		2.15	2.52
1946	4" thick R20	G		1300	.006	▼		2.64	.24		2.88	3.31
1948	Topered for drainoge	G		1950	.004	B.F.		.58	.16		.74	.91
1950	40 psi compressive strength, 1" thick R5	G		1950	.004	S.F.		.51	.16		.67	.83
1952	2" thick R10	G		1625	.005			.97	.19		1.16	1.40
1954	3" thick R15	G		1300	.006			1.40	.24		1.64	1.95
1956	4" thick R20	G		1300	.006	▼		1.84	.24		2.08	2.43
1958	Topered for drainoge	G		1820	.004	B.F.		.73	.17		.90	1.09
1960	60 PSI compressive strength, 1" thick R5	G		1885	.004	S.F.		.71	.17		.88	1.06
1962	2" thick R10	G		1560	.005			1.35	.20		1.55	1.82
1964	3" thick R15	G		1270	.006			2.20	.25		2.45	2.84
1966	4" thick R20	G		1235	.006	▼		2.73	.25		2.98	3.44
1968	Topered for drainoge	G		1820	.004	B.F.		.93	.17		1.10	1.31
2010	Exponded polystyrene, 1#/C.F. density, 3/4" thick R2.89	G		1950	.004	S.F.		.18	.16		.34	.47
2020	1" thick R3.85	G		1950	.004			.24	.16		.40	.53
2100	2" thick R7.69	G	▼	1625	.005	▼		.48	.19		.67	.86

07 22 Roof and Deck Insulation

07 22 16 – Roof Board Insulation

07 22 16.10 Roof Deck Insulation			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
2110	3" thick R11.49	G	1 Rofc	1625	.005	S.F.	.72	.19		.91	1.12
2120	4" thick R15.38	G		1625	.005		.96	.19		1.15	1.39
2130	5" thick R19.23	G		1495	.005		1.20	.21		1.41	1.68
2140	6" thick R23.26	G		1495	.005		1.44	.21		1.65	1.94
2150	Tapered for drainage	G		1950	.004	B.F.	.51	.16		.67	.83
2400	Composites with 2" EPS										
2410	1" fiberboard	G	1 Rofc	1325	.006	S.F.	1.33	.24		1.57	1.86
2420	7/16" oriented strand board	G		1040	.008		1.07	.30		1.37	1.69
2430	1/2" plywood	G		1040	.008		1.32	.30		1.62	1.96
2440	1" perlite	G	▼	1040	.008	▼	1.09	.30		1.39	1.71
2450	Composites with 1-1/2" polyisocyanurate										
2460	1" fiberboard	G	1 Rofc	1040	.008	S.F.	1.13	.30		1.43	1.75
2470	1" perlite	G		1105	.007		1.01	.28		1.29	1.59
2480	7/16" oriented strand board	G		1040	.008		.89	.30		1.19	1.49
3000	Fastening alternatives, coated screws, 2"			3744	.002	Ea.	.05	.08		.13	.20
3010	4"			3120	.003		.10	.10		.20	.28
3020	6"			2675	.003		.17	.12		.29	.39
3030	8"			2340	.003		.25	.13		.38	.51
3040	10"			1872	.004		.43	.17		.60	.75
3050	Pre-drill and drive wedge spike, 2-1/2"			1248	.006		.37	.25		.62	.84
3060	3-1/2"			1101	.007		.48	.28		.76	1.01
3070	4-1/2"			936	.009		.60	.33		.93	1.23
3075	3" galvanized deck plates			7488	.001		.07	.04		.11	.15
3080	Spat map asphalt		G-1	295	.190	Sq.	5.50	6.95	1.88	14.33	19.90
3090	Full map asphalt		"	192	.292		11	10.65	2.88	24.53	33.50
3100	Low-rise polyurethane adhesive		G-2A	100	.240	▼	.18	8.40	7.40	15.98	22

07 24 Exterior Insulation and Finish Systems

07 24 13 – Polymer-Based Exterior Insulation and Finish System

07 24 13.10 Exterior Insulation and Finish Systems

0010	EXTERIOR INSULATION AND FINISH SYSTEMS										
0095	Field applied, 1" EPS insulation	G	J-1	390	.103	S.F.	1.92	4.11	.37	6.40	8.70
0100	With 1/2" cement board sheathing	G		268	.149		2.65	6	.54	9.19	12.50
0105	2" EPS insulation	G		390	.103		2.16	4.11	.37	6.64	9
0110	With 1/2" cement board sheathing	G		268	.149		2.89	6	.54	9.43	12.75
0115	3" EPS insulation	G		390	.103		2.40	4.11	.37	6.88	9.25
0120	With 1/2" cement board sheathing	G		268	.149		3.13	6	.54	9.67	13.05
0125	4" EPS insulation	G		390	.103		2.64	4.11	.37	7.12	9.50
0130	With 1/2" cement board sheathing	G		268	.149		4.11	6	.54	10.65	14.10
0140	Premium finish add			1265	.032		.31	1.27	.11	1.69	2.37
0150	Heavy duty reinforcement add			914	.044		.81	1.75	.16	2.72	3.70
0160	2.5#/S.Y. metal lath substrate add		1 Lath	75	.107	S.Y.	3.05	4.33		7.38	9.70
0170	3.4#/S.Y. metal lath substrate add		"	75	.107	"	3.80	4.33		8.13	10.55
0180	Color or texture change,		J-1	1265	.032	S.F.	.75	1.27	.11	2.13	2.86
0190	With substrate leveling base coat		1 Plas	530	.015		.75	.63		1.38	1.78
0210	With substrate sealing base coat		1 Pard	1224	.007	▼	.08	.26		.34	.48
0370	V groove shape in panel face					L.F.	.60			.60	.66
0380	U groove shape in panel face					"	.79			.79	.87
0440	Far higher than one story, add								25%		

07 25 Weather Barriers

07 25 10 – Weather Barriers or Wraps

07 25 10.10 Weather Barriers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WEATHER BARRIERS									
0400	Asphalt felt paper, 15#	1 Corp	37	.216	Sq.	5.40	9.90		15.30	21.50
0401	Per square foot	"	3700	.002	S.F.	.05	.10		.15	.21
0450	Housewrap, exterior, spun bonded polypropylene									
0470	Small roll	1 Corp	3800	.002	S.F.	.14	.10		.24	.3
0480	Large roll	"	4000	.002	"	.14	.09		.23	.29
2100	Asphalt felt roof deck vapor barrier, class 1 metal decks	1 Rofc	37	.216	Sq.	22	8.45		30.45	38.50
2200	For all other decks	"	37	.216		16.40	8.45		24.85	32.50
2800	Asphalt felt, 50% recycled content, 15 lb., 4 sq. per roll	1 Corp	36	.222		5.40	10.20		15.60	21.50
2810	30 lb., 2 sq. per roll	"	36	.222		10.80	10.20		21	27.50
3000	Building wrap, spunbonded polyethylene	2 Corp	8000	.002	S.F.	.14	.09		.23	.29

07 26 Vapor Retarders

07 26 10 – Above-Grade Vapor Retarders

07 26 10.10 Vapor Retarders

0010	VAPOR RETARDERS									
0020	Aluminum and kraft laminated, foil 1 side	 1 Corp	37	.216	Sq.	11.25	9.90		21.15	27.50
0100	Foil 2 sides		37	.216		12.50	9.90		22.40	29
0600	Polyethylene vapor barrier, standard, .002" thick		37	.216		1.50	9.90		11.40	16.95
0700	.004" thick		37	.216		2.91	9.90		12.81	18.50
0900	.006" thick		37	.216		3.98	9.90		13.88	19.70
1200	.010" thick		37	.216		8.85	9.90		18.75	25
1300	Clear reinforced, fire retardant, .008" thick		37	.216		10.50	9.90		20.40	27
1350	Cross laminated type, .003" thick		37	.216		7.45	9.90		17.35	23.50
1400	.004" thick		37	.216		7.80	9.90		17.70	24
1800	Reinf. waterproof, .002" polyethylene backing, 1 side		37	.216		5.95	9.90		15.85	22
1900	2 sides		37	.216		7.80	9.90		17.70	24
2400	Waterproofed kraft with sisol or fiberglass fibers, minimum		37	.216		12.50	9.90		22.40	29
2500	Maximum	▼	37	.216	▼	13.50	9.90		23.40	30

07 27 Air Barriers

07 27 26 – Fluid-Applied Membrane Air Barriers

07 27 26.10 Fluid Applied Membrane Air Barrier

0010	FLUID APPLIED MEMBRANE AIR BARRIER									
0100	Spray applied vapor barrier, 25 S.F./gallon	1 Prod	1375	.006	S.F.	.01	.23		.24	.37

07 31 Shingles and Shakes

07 31 13 – Asphalt Shingles

07 31 13.10 Asphalt Roof Shingles

0010	ASPHALT ROOF SHINGLES									
0100	Standard strip shingles									
0150	Inorganic, class A, 210-235 lb./sq.	1 Rofc	5.50	1.455	Sq.	81	57		138	186
0155	Pneumatic nailed		7	1.143		81	44.50		125.50	165
0200	235-240 lb./sq.		5	1.600		96	62.50		158.50	213
0205	Pneumatic nailed	▼	6.25	1.280	▼	96	50		146	192
0250	Standard, laminated multi-layered shingles									
0300	Class A, 240-260 lb./sq.	1 Rofc	4.50	1.778	Sq.	106	69.50		175.50	234

07 31 Shingles and Shakes

07 31 13 – Asphalt Shingles

07 31 13.10 Asphalt Roof Shingles		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0305	Pneumatic nailed	1 Rafc	5.63	1.422	Sq.	106	55.50		161.50	211
0350	Class A, 260-300 lb./square, 4 bundles/square		4	2		106	78.50		184.50	249
0355	Pneumatic nailed		5	1.600		106	62.50		168.50	223
0400	Premium, laminated multi-layered shingles									
0450	Class A, 260-300 lb., 4 bundles/sq.	1 Rafc	3.50	2.286	Sq.	165	89.50		254.50	335
0455	Pneumatic nailed		4.37	1.831		165	71.50		236.50	305
0500	Class A, 300-385 lb./square, 5 bundles/square		3	2.667		219	104		323	420
0505	Pneumatic nailed		3.75	2.133		219	83.50		302.50	385
0800	#15 felt underlayment		64	.125		5.40	4.89		10.29	14.30
0825	#30 felt underlayment		58	.138		10.80	5.40		16.20	21
0850	Self adhering polyethylene and rubberized asphalt underlayment		22	.364		77	14.25		91.25	109
0900	Ridge shingles		330	.024	L.F.	2	.95		2.95	3.82
0905	Pneumatic nailed		412.50	.019	"	2	.76		2.76	3.49
1000	Far steep roofs (7 to 12 pitch or greater), add						50%			

07 31 16 – Metal Shingles

07 31 16.10 Aluminum Shingles

0010	ALUMINUM SHINGLES									
0020	Mill finish, .019 thick	1 Carp	5	1.600	Sq.	221	73.50		294.50	355
0100	.020" thick	"	5	1.600		222	73.50		295.50	355
0300	Far colors, add					20			20	22
0600	Ridge cap, .024" thick	1 Carp	170	.047	L.F.	3.60	2.16		5.76	7.30
0700	End wall flashing, .024" thick		170	.047		1.99	2.16		4.15	5.50
0900	Valley section, .024" thick		170	.047		3.43	2.16		5.59	7.10
1000	Starter strip, .024" thick		400	.020		1.58	.92		2.50	3.16
1200	Side wall flashing, .024" thick		170	.047		1.99	2.16		4.15	5.50
1500	Gable flashing, .024" thick		400	.020		1.58	.92		2.50	3.16

07 31 16.20 Steel Shingles

0010	STEEL SHINGLES									
0012	Galvanized, 26 ga.	1 Rats	2.20	3.636	Sq.	335	143		478	610
0200	24 ga.	"	2.20	3.636		335	143		478	610
0300	Far colored galvanized shingles, add					55			55	60.50

07 31 26 – Slate Shingles

07 31 26.10 Slate Roof Shingles

0010	SLATE ROOF SHINGLES	R073126-20								
0100	Buckingham Virginia black, 3/16" - 1/4" thick		1 Rats	1.75	4.571	Sq.	475	180	655	830
0200	1/4" thick			1.75	4.571		475	180	655	830
0900	Pennsylvania black, Bangor, #1 clear			1.75	4.571		490	180	670	845
1200	Vermont, unfading, green, mottled green			1.75	4.571		480	180	660	830
1300	Semi-weathering green & gray			1.75	4.571		350	180	530	685
1400	Purple			1.75	4.571		425	180	605	770
1500	Black or gray			1.75	4.571		460	180	640	810
1600	Red			1.75	4.571		1,175	180	1,355	1,575
1700	Variegated purple			1.75	4.571		415	180	595	760
2700	Ridge shingles, slate			200	.040	L.F.	9.30	1.57	10.87	12.90

07 31 29 – Wood Shingles and Shakes

07 31 29.13 Wood Shingles

0010	WOOD SHINGLES									
0012	16" Na. 1 red cedar shingles, 5" exposure, on roof	1 Carp	2.50	3.200	Sq.	264	147		411	515
0015	Pneumatic nailed		3.25	2.462		264	113		377	465
0200	7-1/2" exposure, on walls		2.05	3.902		176	179		355	470
0205	Pneumatic nailed		2.67	2.996		176	137		313	405

07 31 Shingles and Shakes

07 31 29 – Wood Shingles and Shakes

07 31 29.13 Wood Shingles

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0300	18" No. 1 red cedar perfections, 5-1/2" exposure, on roof	1 Carp	2.75	2.909	Sq.	227	133		360	455
0305	Pneumatic nailed		3.57	2.241		227	103		330	410
0500	7-1/2" exposure, on walls		2.25	3.556		167	163		330	435
0505	Pneumatic nailed		2.92	2.740		167	126		293	380
0600	Resquared, and rebuttet, 5-1/2" exposure, on roof		3	2.667		280	122		402	500
0605	Pneumatic nailed		3.90	2.051		280	94		374	455
0900	7-1/2" exposure, on walls		2.45	3.265		206	150		356	460
0905	Pneumatic nailed		3.18	2.516		206	115		321	405
1000	Add to above for fire retardant shingles					55			55	60.50
1060	Prefarmed ridge shingles	1 Carp	400	.020	L.F.	4.50	.92		5.42	6.35
2000	White cedar shingles, 16" lang, extras, 5" exposure, on roof		2.40	3.333	Sq.	173	153		326	425
2005	Pneumatic nailed		3.12	2.564		173	118		291	370
2050	5" exposure on walls		2	4		173	183		356	475
2055	Pneumatic nailed		2.60	3.077		173	141		314	410
2100	7-1/2" exposure, an walls		2	4		123	183		306	420
2105	Pneumatic nailed		2.60	3.077		123	141		264	355
2150	"B" grade, 5" exposure on walls		2	4		150	183		333	450
2155	Pneumatic nailed		2.60	3.077		150	141		291	385
2300	For 15# arganic felt underlayment on roof, 1 layer, add		64	.125		5.40	5.75		11.15	14.80
2400	2 layers, add		32	.250		10.80	11.45		22.25	29.50
2600	For steep raafs (7/12 pitch or greater), add to above						50%			
2700	Panelized systems, No.1 cedar shingles on 5/16" CDX plywood									
2800	On walls, 8' strips, 7" or 14" exposure	2 Carp	700	.023	S.F.	6	1.05		7.05	8.20
3500	On raafs, 8' strips, 7" or 14" exposure	1 Carp	3	2.667	Sq.	600	122		722	850
3505	Pneumatic nailed	"	4	2	"	600	91.50		691.50	800

07 31 29.16 Wood Shakes

0010	WOOD SHAKES									
1100	Hand-split red cedar shakes, 1/2" thick x 24" lang, 10" exp. an roof	1 Carp	2.50	3.200	Sq.	253	147		400	505
1105	Pneumatic nailed		3.25	2.462		253	113		366	450
1110	3/4" thick x 24" long, 10" exp. on roof		2.25	3.556		253	163		416	530
1115	Pneumatic nailed		2.92	2.740		253	126		379	470
1200	1/2" thick, 18" lang, 8-1/2" exp. an roof		2	4		179	183		362	480
1205	Pneumatic nailed		2.60	3.077		179	141		320	415
1210	3/4" thick x 18" lang, 8 1/2" exp. an roof		1.80	4.444		179	204		383	510
1215	Pneumatic nailed		2.34	3.419		179	157		336	440
1255	10" exp. an walls		2	4		173	183		356	475
1260	10" expasue an walls, pneumatic nailed		2.60	3.077		173	141		314	410
1700	Add to above for fire retardant shakes, 24" lang					55			55	60.50
1800	18" lang					55			55	60.50
1810	Ridge shakes	1 Carp	350	.023	L.F.	4.50	1.05		5.55	6.55

07 32 Roof Tiles

07 32 13 – Clay Roof Tiles

07 32 13.10 Clay Tiles		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	CLAY TILES , including accessories									
0300	Flat shingle, interlocking, 15", 166 pcs/sq, fireflashed blend	3 Rats	6	4	Sq.	510	157		667	830
0500	Terra cotta red		6	4		510	157		667	830
0600	Raman pan and tap, 18", 102 pcs/sq, fireflashed blend		5.50	4.364		560	172		732	905
0640	Terra cotta red	1 Rats	2.40	3.333		560	131		691	840
1100	Barrel mission tile, 18", 166 pcs/sq, fireflashed blend	3 Rats	5.50	4.364		405	172		577	735
1140	Terra cotta red		5.50	4.364		405	172		577	735
1700	Scallaped edge flat shingle, 14", 145 pcs/sq, fireflashed blend		6	4		1,125	157		1,282	1,525
1800	Terra cotta red		6	4		1,125	157		1,282	1,525
3010	#15 felt underlayment	1 Raft	64	.125		5.40	4.89		10.29	14.30
3020	#30 felt underlayment		58	.138		10.80	5.40		16.20	21
3040	Polyethylene and rubberized asph. underlayment		22	.364		77	14.25		91.25	109

07 32 16 – Concrete Roof Tiles

07 32 16.10 Concrete Tiles

0010	CONCRETE TILES									
0020	Carrugated, 13" x 16-1/2", 90 per sq., 950 lb. per sq.									
0050	Earthtane calars, nailed to waad deck	1 Rats	1.35	5.926	Sq.	104	233		337	510
0150	Blues		1.35	5.926		104	233		337	510
0200	Greens		1.35	5.926		108	233		341	515
0250	Premium calars	▼	1.35	5.926	▼	108	233		341	515
0500	Shakes, 13" x 16-1/2", 90 per sq., 950 lb. per sq.									
0600	All calars, nailed to waad deck	1 Rats	1.50	5.333	Sq.	88.50	210		298.50	450
1500	Accessary pieces, ridge & hip, 10" x 16-1/2", 8 lb. each	"	120	.067	Ea.	3.88	2.62		6.50	8.75
1700	Rake, 6-1/2" x 16-3/4", 9 lb. each					3.88			3.88	4.27
1800	Mansard hip, 10" x 16-1/2", 9.2 lb. each					3.88			3.88	4.27
1900	Hip starter, 10" x 16-1/2", 10.5 lb. each					12.20			12.20	13.40
2000	3 or 4 way apex, 10" each side, 11.5 lb. each				▼	14.10			14.10	15.50

07 32 19 – Metal Roof Tiles

07 32 19.10 Metal Roof Tiles

0010	METAL ROOF TILES									
0020	Accessaries included, .032" thick aluminum, mission tile	1 Carp	2.50	3.200	Sq.	815	147		962	1,125
0200	Spanish tiles	"	3	2.667	"	560	122		682	805

07 33 Natural Roof Coverings

07 33 63 – Vegetated Roofing

07 33 63.10 Green Roof Systems

0010	GREEN ROOF SYSTEMS										
0020	Sail mixture for green roof 30% sand, 55% gravel, 15% sail										
0100	Haist and spread sail mixture 4 inch depth up to five staries tall roof		B-13B	4000	.014	S.F.	.25	.56	.28	1.09	1.44
0150	6 inch depth			2667	.021		.37	.84	.43	1.64	2.16
0200	8 inch depth			2000	.028		.50	1.12	.57	2.19	2.89
0250	10 inch depth			1600	.035		.62	1.40	.71	2.73	3.60
0300	12 inch depth			1335	.042		.75	1.67	.85	3.27	4.33
0310	Alt. man-made sail mix, haist & spread, 4" deep up to 5 staries tall roof		▼	4000	.014	▼	1.80	.56	.28	2.64	3.15
0350	Mobilization 55 tan crane to site		1 Eqhv	3.60	2.222	Ea.		112		112	169
0355	Haisting cast to five staries per day (Avg. 28 picks per day)		B-13B	1	56	Day		2,225	1,125	3,350	4,675
0360	Mobilization or demobilization, 100 tan crane to site driver & escort		A-3E	2.50	6.400	Ea.		281	67.50	348.50	500
0365	Haisting cast six to ten staries per day (Avg. 21 picks per day)		B-13C	1	56	Day		2,225	1,700	3,925	5,300
0370	Haist and spread sail mixture 4 inch depth six to ten staries tall roof			4000	.014	S.F.	.25	.56	.43	1.24	1.60
0375	6 inch depth		▼	2667	.021	▼	.37	.84	.64	1.85	2.39

07 33 Natural Roof Coverings

07 33 63 – Vegetated Roofing

07 33 63.10 Green Roof Systems

			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Base Costs		Total	Total Incl O&P
								Labor	Equipment		
0380	8 inch depth		B-13C	2000	.028	S.F.	.50	1.12	.85	2.47	3.20
0385	10 inch depth			1600	.035		.62	1.40	1.06	3.08	3.99
0390	12 inch depth			1335	.042		.75	1.67	1.28	3.70	4.79
0400	Green roof edging treated lumber 4" x 4" no hoisting included		2 Carp	400	.040	L.F.	1.22	1.83		3.05	4.17
0410	4" x 6"			400	.040		1.77	1.83		3.60	4.77
0420	4" x 8"			360	.044		3.07	2.04		5.11	6.50
0430	4" x 6" double stacked			300	.053		3.53	2.45		5.98	7.65
0500	Green roof edging redwood lumber 4" x 4" no hoisting included			400	.040		6.45	1.83		8.28	9.90
0510	4" x 6"			400	.040		11.20	1.83		13.03	15.15
0520	4" x 8"			360	.044		20.50	2.04		22.54	25.50
0530	4" x 6" double stacked			300	.053		22.50	2.45		24.95	28.50
0550	Components, not including membrane or insulation:										
0560	Fluid applied rubber membrane, reinforced, 215 mil thick		G-5	350	.114	S.F.	.26	4.06	.57	4.89	7.80
0570	Root barrier		2 Root	775	.021		.55	.81		1.36	1.99
0580	Moisture retention barrier and reservoir		"	900	.018		2.20	.70		2.90	3.61
0600	Planting sedum, light soil, potted, 2-1/4" diameter, two per S.F.		1 Club	420	.019		5.20	.70		5.90	6.80
0610	one per S.F.		"	840	.010		2.60	.35		2.95	3.40
0630	Planting sedum mat per S.F. including shipping (4000 S.F. min)		4 Club	4000	.008		6.25	.29		6.54	7.30
0640	Installation sedum mat system (no soil required) per S.F. (4000 S.F. min)		"	4000	.008		8.70	.29		8.99	10
0645	Note: pricing of sedum mats shipped in full truck loads (4000-5000 S.F.)										

07 41 Roof Panels

07 41 13 – Metal Roof Panels

07 41 13.10 Aluminum Roof Panels

0010	ALUMINUM ROOF PANELS										
0020	Corrugated or ribbed, .0155" thick, natural		G-3	1200	.027	S.F.	.99	1.22		2.21	2.96
0300	Painted			1200	.027		1.44	1.22		2.66	3.45
0400	Corrugated, .018" thick, on steel frame, natural finish			1200	.027		1.30	1.22		2.52	3.30
0600	Painted			1200	.027		1.60	1.22		2.82	3.63
0700	Corrugated, on steel frame, natural, .024" thick			1200	.027		1.85	1.22		3.07	3.91
0800	Painted			1200	.027		2.25	1.22		3.47	4.35
0900	.032" thick, natural			1200	.027		2.39	1.22		3.61	4.50
1200	Painted			1200	.027		3.06	1.22		4.28	5.25
1300	V-Beam, on steel frame construction, .032" thick, natural			1200	.027		2.53	1.22		3.75	4.65
1500	Painted			1200	.027		3.10	1.22		4.32	5.30
1600	.040" thick, natural			1200	.027		3.07	1.22		4.29	5.25
1800	Painted			1200	.027		3.70	1.22		4.92	5.95
1900	.050" thick, natural			1200	.027		3.69	1.22		4.91	5.95
2100	Painted			1200	.027		4.45	1.22		5.67	6.75
2200	For roofing on wood frame, deduct			4600	.007		.08	.32		.40	.58
2400	Ridge cap, .032" thick, natural			800	.040	L.F.	2.91	1.83		4.74	6

07 41 13.20 Steel Roofing Panels

0010	STEEL ROOFING PANELS										
0012	Corrugated or ribbed, on steel framing, 30 ga. galv		G-3	1100	.029	S.F.	1.67	1.33		3	3.88
0100	28 ga.			1050	.030		1.79	1.39		3.18	4.11
0300	26 ga.			1000	.032		1.85	1.46		3.31	4.28
0400	24 ga.			950	.034		2.90	1.54		4.44	5.55
0600	Galvalume, 28 ga.			1050	.030		1.67	1.39		3.06	3.98
0700	26 ga.			1000	.032		1.98	1.46		3.44	4.42
0710	Flat profile, 1-3/4" standing seams, 10" wide, standard finish, 26 ga.			1000	.032		3.75	1.46		5.21	6.35
0715	24 ga.			950	.034		4.35	1.54		5.89	7.15

07 41 Roof Panels

07 41 13 – Metal Roof Panels

07 41 13.20 Steel Roofing Panels						2014 Bare Costs		Total	Total Incl O&P
		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	
0720	22 ga.	G-3	900	.036	S.F.	5.35	1.62		8.40
0725	Zinc aluminum alloy finish, 26 ga.		1000	.032		2.94	1.46		5.45
0730	24 ga.		950	.034		3.51	1.54		6.20
0735	22 ga.		900	.036		4.02	1.62		6.90
0740	12" wide, standard finish, 26 ga.		1000	.032		3.74	1.46		6.35
0745	24 ga.		950	.034		4.91	1.54		7.75
0750	Zinc aluminum alloy finish, 26 ga.		1000	.032		4.26	1.46		6.95
0755	24 ga.		950	.034		3.50	1.54		6.20
0840	Flat profile, 1" x 3/8" batten, 12" wide, standard finish, 26 ga.		1000	.032		3.30	1.46		5.85
0845	24 ga.		950	.034		3.87	1.54		6.60
0850	22 ga.		900	.036		4.63	1.62		7.60
0855	Zinc aluminum alloy finish, 26 ga.		1000	.032		3.16	1.46		5.70
0860	24 ga.		950	.034		3.53	1.54		6.25
0865	22 ga.		900	.036		4.08	1.62		7
0870	16-1/2" wide, standard finish, 24 ga.		950	.034		3.81	1.54		6.55
0875	22 ga.		900	.036		4.27	1.62		7.20
0880	Zinc aluminum alloy finish, 24 ga.		950	.034		3.33	1.54		6
0885	22 ga.		900	.036		3.71	1.62		6.55
0890	Flat profile, 2" x 2" batten, 12" wide, standard finish, 26 ga.		1000	.032		3.79	1.46		6.40
0895	24 ga.		950	.034		4.53	1.54		7.35
0900	22 ga.		900	.036		5.55	1.62		8.60
0905	Zinc aluminum alloy finish, 26 ga.		1000	.032		3.53	1.46		6.10
0910	24 ga.		950	.034		4.03	1.54		6.80
0915	22 ga.		900	.036		4.69	1.62		7.65
0920	16-1/2" wide, standard finish, 24 ga.		950	.034		4.16	1.54		6.95
0925	22 ga.		900	.036		4.87	1.62		7.85
0930	Zinc aluminum alloy finish, 24 ga.		950	.034		3.77	1.54		6.50
0935	22 ga.		900	.036		4.29	1.62		7.20
1200	Ridge, galvanized, 10" wide			800	.040	L.F.	3.05	1.83	6.15
1203	14" wide		2 Shee	316	.051		3.66	2.77	8.25
1205	18" wide		"	308	.052		4.27	2.84	9.05
1210	20" wide		G-3	750	.043		4.32	1.95	7.75

07 41 33 – Plastic Roof Panels

07 41 33.10 Fiberglass Panels

FIBERGLASS PANELS									
0010									
0012	Corrugated panels, roofing, 8 oz. per S.F.	G-3	1000	.032	S.F.	2.08	1.46		4.53
0100	12 oz. per S.F.		1000	.032		3.55	1.46		6.15
0300	Corrugated siding, 6 oz. per S.F.		880	.036		1.75	1.66		4.48
0400	8 oz. per S.F.		880	.036		2.08	1.66		4.84
0500	Fire retardant		880	.036		3.51	1.66		6.40
0600	12 oz. siding, textured		880	.036		3.60	1.66		6.50
0700	Fire retardant		880	.036		4.20	1.66		7.15
0900	Flat panels, 6 oz. per S.F., clear or colors		880	.036		2.20	1.66		4.97
1100	Fire retardant, class A		880	.036		3.30	1.66		6.20
1300	8 oz. per S.F., clear or colors		880	.036		2.42	1.66		5.20
1700	Sandwich panels, fiberglass, 1-9/16" thick, panels to 20 S.F.		180	.178		35	8.10		51
1900	As above, but 2-3/4" thick, panels to 100 S.F.		265	.121		25	5.50		36

07 42 Wall Panels

07 42 13 – Metal Wall Panels

07 42 13.10 Mansard Panels

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	MANSARD PANELS									
0600	Aluminum, stock units, straight surfaces	1 Shee	115	.070	S.F.	3.79	3.81		7.60	9.95
0700	Concave or convex surfaces		75	.107	"	2	5.85		7.85	11.10
0800	For framing, to 5' high, add		115	.070	L.F.	3.50	3.81		7.31	9.65
0900	Soffits, to 1' wide	▼	125	.064	S.F.	2.14	3.50		5.64	7.70

07 42 13.20 Aluminum Siding Panels

0010	ALUMINUM SIDING PANELS									
0012	Corrugated, on steel framing, .019 thick, natural finish	G-3	775	.041	S.F.	1.52	1.89		3.41	4.56
0100	Painted		775	.041		1.63	1.89		3.52	4.68
0400	Form type, .021" thick on steel frame, natural		775	.041		1.53	1.89		3.42	4.57
0600	Painted		775	.041		1.63	1.89		3.52	4.68
0700	Industrial type, corrugated, on steel, .024" thick, mill		775	.041		2.12	1.89		4.01	5.20
0900	Painted		775	.041		2.28	1.89		4.17	5.40
1000	.032" thick, mill		775	.041		2.44	1.89		4.33	5.55
1200	Painted		775	.041		2.97	1.89		4.86	6.15
1300	V-Beam, on steel frame, .032" thick, mill		775	.041		2.75	1.89		4.64	5.90
1500	Painted		775	.041		3.15	1.89		5.04	6.35
1600	.040" thick, mill		775	.041		3.34	1.89		5.23	6.55
1800	Painted		775	.041		3.91	1.89		5.80	7.20
1900	.050" thick, mill		775	.041		3.95	1.89		5.84	7.25
2100	Painted		775	.041		4.71	1.89		6.60	8.10
2200	Ribbed, 3" profile, on steel frame, .032" thick, natural		775	.041		2.37	1.89		4.26	5.50
2400	Painted		775	.041		3.01	1.89		4.90	6.20
2500	.040" thick, natural		775	.041		2.72	1.89		4.61	5.90
2700	Painted		775	.041		3.17	1.89		5.06	6.40
2750	.050" thick, natural		775	.041		3.13	1.89		5.02	6.35
2760	Painted		775	.041		3.60	1.89		5.49	6.85
3300	For siding on wood frame, deduct from above	▼	2800	.011	▼	.09	.52		.61	.90
3400	Screw fasteners, aluminum, self tapping, neoprene washer, 1"				M	206			206	226
3600	Stitch screws, self tapping, with neoprene washer, 5/8"				"	154			154	170
3630	Flashing, sidewall, .032" thick	G-3	800	.040	L.F.	2.85	1.83		4.68	5.95
3650	End wall, .040" thick		800	.040		3.33	1.83		5.16	6.45
3670	Closure strips, corrugated, .032" thick		800	.040		.85	1.83		2.68	3.74
3680	Ribbed, 4" or 8", .032" thick		800	.040		.85	1.83		2.68	3.74
3690	V-beam, .040" thick	▼	800	.040	▼	1.14	1.83		2.97	4.05
3800	Horizontal, colored clapboard, 8" wide, plain	2 Corp	515	.031	S.F.	2.36	1.42		3.78	4.80
3810	Insulated	▼	515	.031		2.57	1.42		3.99	5.05
4000	Vertical board & batten, colored, non-insulated	▼	515	.031		1.83	1.42		3.25	4.21
4200	For simulated wood design, add					.11			.11	.12
4300	Carriers for above, outside	2 Corp	515	.031	V.L.F.	3.23	1.42		4.65	5.75
4500	Inside corners	"	515	.031	"	1.55	1.42		2.97	3.91

07 42 13.30 Steel Siding

0010	STEEL SIDING									
0020	Beveled, vinyl coated, 8" wide	1 Corp	265	.030	S.F.	1.91	1.38		3.29	4.24
0050	10" wide	"	275	.029		2.04	1.33		3.37	4.30
0080	Galv, corrugated or ribbed, on steel frame, 30 ga.	G-3	800	.040		1.31	1.83		3.14	4.24
0100	28 ga.		795	.040		1.38	1.84		3.22	4.34
0300	26 ga.		790	.041		1.91	1.85		3.76	4.94
0400	24 ga.		785	.041		1.94	1.86		3.80	4.99
0600	22 ga.		770	.042		2.24	1.90		4.14	5.35
0700	Colored, corrugated/ribbed, on steel frame, 10 yr. finish, 28 ga.		800	.040		2.04	1.83		3.87	5.05
0900	26 ga.		795	.040		2.13	1.84		3.97	5.15

07 42 Wall Panels

07 42 13 – Metal Wall Panels

07 42 13.30 Steel Siding		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1000	24 ga.	G-3	790	.041	S.F.	2.49	1.85		4.34	5.60
1020	20 ga.		785	.041		3.15	1.86		5.01	6.35
1200	Factory sandwich panel, 26 ga., 1" insulation, galvanized		380	.084		5.25	3.85		9.10	11.65
1300	Colored 1 side		380	.084		6.40	3.85		10.25	12.95
1500	Galvanized 2 sides		380	.084		7.95	3.85		11.80	14.65
1600	Colored 2 sides		380	.084		8.25	3.85		12.10	14.95
1800	Acrylic point face, regular point liner		380	.084		6.20	3.85		10.05	12.70
1900	For 2" thick polystyrene, odd					.96			.96	1.06
2000	22 ga., galv, 2" insulation, baked enamel exterior	G-3	360	.089		12.15	4.06		16.21	19.65
2100	Polyvinylidene exterior finish	"	360	.089		12.80	4.06		16.86	20.50

07 44 Faced Panels

07 44 73 – Metal Faced Panels

07 44 73.10 Metal Faced Panels and Accessories

0010	METAL FACED PANELS AND ACCESSORIES									
0400	Textured aluminum, 4' x 8' x 5/16" plywood backing, single face	2 Shee	375	.043	S.F.	4.07	2.33		6.40	8.05
0600	Double face		375	.043		5.25	2.33		7.58	9.35
0700	4' x 10' x 5/16" plywood backing, single face		375	.043		4.26	2.33		6.59	8.25
0900	Double face		375	.043		5.80	2.33		8.13	9.95
1000	4' x 12' x 5/16" plywood backing, single face		375	.043		4.26	2.33		6.59	8.25
1300	Smooth aluminum, 1/4" plywood panel, fluoropolymer finish, double face		375	.043		6.05	2.33		8.38	10.20
1350	Clear anodized finish, double face		375	.043		10.05	2.33		12.38	14.60
1400	Double face textured aluminum, structural panel, 1" EPS insulation		375	.043		5.70	2.33		8.03	9.80
1500	Accessories, outside corner	1 Shee	175	.046	L.F.	1.90	2.50		4.40	5.90
1600	Inside corner		175	.046		1.34	2.50		3.84	5.30
1800	Batten mounting clip		200	.040		.49	2.19		2.68	3.88
1900	Low profile batten		480	.017		.61	.91		1.52	2.06
2100	High profile batten		480	.017		1.41	.91		2.32	2.94
2200	Water table		200	.040		2.12	2.19		4.31	5.65
2400	Horizontal joint connector		200	.040		1.67	2.19		3.86	5.20
2500	Corner cap		200	.040		1.84	2.19		4.03	5.35
2700	H - moulding		480	.017		1.25	.91		2.16	2.77

07 46 Siding

07 46 23 – Wood Siding

07 46 23.10 Wood Board Siding

0010	WOOD BOARD SIDING									
3200	Wood, cedar bevel, A grade, 1/2" x 6"	1 Carp	295	.027	S.F.	4.14	1.24		5.38	6.45
3300	1/2" x 8"		330	.024		5.90	1.11		7.01	8.20
3500	3/4" x 10", clear grade		375	.021		6.30	.98		7.28	8.40
3600	"B" grade		375	.021		3.79	.98		4.77	5.70
3800	Cedar, rough sown, 1" x 4", A grade, natural		220	.036		6.35	1.67		8.02	9.55
3900	Stained		220	.036		6.50	1.67		8.17	9.70
4100	1" x 12", board & batten, #3 & Btr., natural		420	.019		4.35	.87		5.22	6.15
4200	Stained		420	.019		4.67	.87		5.54	6.50
4400	1" x 8" channel siding, #3 & Btr., natural		330	.024		4.43	1.11		5.54	6.60
4500	Stained		330	.024		4.78	1.11		5.89	6.95
4700	Redwood, clear, beveled, vertical grain, 1/2" x 4"		220	.036		4.11	1.67		5.78	7.10
4750	1/2" x 6"		295	.027		4.49	1.24		5.73	6.85

07 46 Siding

07 46 23 – Wood Siding

07 46 23.10 Wood Board Siding

		Crew	Doily Output	Labor- Hours	Unit	Material	2014 Bore Costs Lobor Equipment	Total	Total Incl O&P
4800	1/2" x 8"	1 Carp	330	.024	S.F.	4.89	1.11	6	7.10
5000	3/4" x 10"		375	.021		4.50	.98	5.48	6.45
5200	Chönnel siding, 1" x 10", B grode		375	.021		4.12	.98	5.10	6.05
5250	Redwood, T&G boards, B grode, 1" x 4"		220	.036		2.54	1.67	4.21	5.35
5270	1" x 8"		330	.024		4.10	1.11	5.21	6.25
5400	White pine, rough sown, 1" x 8", noturol		330	.024		2.19	1.11	3.30	4.13
5500	Stained		330	.024		2.19	1.11	3.30	4.13

07 46 29 – Plywood Siding

07 46 29.10 Plywood Siding Options

0010	PLYWOOD SIDING OPTIONS								
0900	Plywood, medium density overloid, 3/8" thick	2 Corp	750	.021	S.F.	1.15	.98	2.13	2.78
1000	1/2" thick		700	.023		1.36	1.05	2.41	3.12
1100	3/4" thick		650	.025		1.74	1.13	2.87	3.65
1600	Texture 1-11, cedar, 5/8" thick, noturol		675	.024		2.43	1.09	3.52	4.35
1700	Foctory stained		675	.024		2.69	1.09	3.78	4.64
1900	Texture 1-11, fir, 5/8" thick, noturol		675	.024		1.57	1.09	2.66	3.41
2000	Foctory stained		675	.024		1.80	1.09	2.89	3.66
2050	Texture 1-11, S.Y.P., 5/8" thick, noturol		675	.024		1.19	1.09	2.28	2.99
2100	Foctory stained		675	.024		1.24	1.09	2.33	3.04
2200	Rough sown cedar, 3/8" thick, noturol		675	.024		1.20	1.09	2.29	3
2300	Foctory stained		675	.024		1.46	1.09	2.55	3.29
2500	Rough sown fir, 3/8" thick, noturol		675	.024		.82	1.09	1.91	2.58
2600	Foctory stained		675	.024		1.04	1.09	2.13	2.82
2800	Redwood, textured siding, 5/8" thick		675	.024		1.92	1.09	3.01	3.79
3000	Polyvinyl chloride coated, 3/8" thick		750	.021		1.11	.98	2.09	2.73

07 46 33 – Plastic Siding

07 46 33.10 Vinyl Siding

0010	VINYL SIDING								
3995	Clopbord profile, woodgroin texture, .048 thick, double 4	2 Corp	495	.032	S.F.	.97	1.48	2.45	3.36
4000	Double 5		550	.029		.97	1.33	2.30	3.13
4005	Single 8		495	.032		1.08	1.48	2.56	3.48
4010	Single 10		550	.029		1.30	1.33	2.63	3.49
4015	.044 thick, double 4		495	.032		.95	1.48	2.43	3.34
4020	Double 5		550	.029		.95	1.33	2.28	3.11
4025	.042 thick, double 4		495	.032		.90	1.48	2.38	3.29
4030	Double 5		550	.029		.90	1.33	2.23	3.06
4035	Cross sown texture, .040 thick, double 4		495	.032		.64	1.48	2.12	3
4040	Double 5		550	.029		.64	1.33	1.97	2.77
4045	Smooth texture, .042 thick, double 4		495	.032		.72	1.48	2.20	3.09
4050	Double 5		550	.029		.72	1.33	2.05	2.86
4055	Single 8		495	.032		.72	1.48	2.20	3.09
4060	Cedor texture, .044 thick, double 4		495	.032		.95	1.48	2.43	3.34
4065	Double 6		600	.027		.96	1.22	2.18	2.95
4070	Dutch lop profile, woodgroin texture, .048 thick, double 5		550	.029		.97	1.33	2.30	3.13
4075	.044 thick, double 4.5		525	.030		.95	1.40	2.35	3.21
4080	.042 thick, double 4.5		525	.030		.80	1.40	2.20	3.05
4085	.040 thick, double 4.5		525	.030		.64	1.40	2.04	2.87
4100	Shoke profile, 10" wide		400	.040		3.26	1.83	5.09	6.40
4105	Verticol pöttern, .046 thick, double 5		550	.029		1.29	1.33	2.62	3.48
4110	.044 thick, triple 3		550	.029		1.47	1.33	2.80	3.68
4115	.040 thick, triple 4		550	.029		1.47	1.33	2.80	3.68
4120	.040 thick, triple 2.66		550	.029		1.62	1.33	2.95	3.85

07 46 Siding

07 46 33 – Plastic Siding

07 46 33.10 Vinyl Siding		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4125	Insulation, fon folded extruded polystyrene, 1/4"	2 Corp	2000	.008	S.F.	.27	.37		.64	.87
4130	3/8"		2000	.008		.30	.37		.67	.90
4135	Accessories, J chonnel, 5/8" pocket		700	.023	L.F.	.44	1.05		1.49	2.10
4140	3/4" pocket		695	.023		.46	1.06		1.52	2.13
4145	1-1/4" pocket		680	.024		.70	1.08		1.78	2.43
4150	Flexible, 3/4" pocket		600	.027		2.20	1.22		3.42	4.31
4155	Under sill finish trim		500	.032		.49	1.47		1.96	2.80
4160	Vinyl starter strip		700	.023		.50	1.05		1.55	2.17
4165	Aluminum starter strip		700	.023		.26	1.05		1.31	1.90
4170	Window cosing, 2-1/2" wide, 3/4" pocket		510	.031		1.46	1.44		2.90	3.82
4175	Outside carner, waadgrain finish, 4" face, 3/4" pocket		700	.023		1.82	1.05		2.87	3.63
4180	5/8" pocket		700	.023		1.82	1.05		2.87	3.63
4185	Smooth finish, 4" face, 3/4" pocket		700	.023		1.82	1.05		2.87	3.63
4190	7/8" pocket		690	.023		1.82	1.06		2.88	3.65
4195	1-1/4" pocket		700	.023		1.28	1.05		2.33	3.03
4200	Soffit ond fascia, 1' overhong, solid		120	.133		4	6.10		10.10	13.85
4205	Vented		120	.133		4	6.10		10.10	13.85
4207	18" overhang, solid		110	.145		4.65	6.65		11.30	15.40
4208	Vented		110	.145		4.65	6.65		11.30	15.40
4210	2' overhong, solid		100	.160		5.30	7.35		12.65	17.10
4215	Vented		100	.160		5.30	7.35		12.65	17.10
4217	3' overhang, solid		100	.160		6.55	7.35		13.90	18.55
4218	Vented	▼	100	.160	▼	6.55	7.35		13.90	18.55
4220	Colors for siding ond soffits, odd				S.F.	.14			.14	.15
4225	Colors for accessories ond trim, odd				L.F.	.29			.29	.32

07 46 33.20 Polypropylene Siding

0010	POLYPROPYLENE SIDING									
4090	Shingle profile, rondon grooves, dauble 7	2 Corp	400	.040	S.F.	2.87	1.83		4.70	6
4092	Cornerpost for obave	1 Corp	365	.022	L.F.	11.15	1.01		12.16	13.80
4095	Triple 5	2 Corp	400	.040	S.F.	2.87	1.83		4.70	6
4097	Carnerpost for above	1 Corp	365	.022	L.F.	10.50	1.01		11.51	13.05
5000	Staggered butt, dauble 7"	2 Corp	400	.040	S.F.	3.26	1.83		5.09	6.40
5002	Cornerpost far above	1 Corp	365	.022	L.F.	11.30	1.01		12.31	14
5010	Holf round, double 6-1/4"	2 Corp	360	.044	S.F.	3.25	2.04		5.29	6.70
5020	Shake profile, staggered butt, dauble 9"	"	510	.031	"	3.25	1.44		4.69	5.80
5022	Cornerpast far above	1 Corp	365	.022	L.F.	8.35	1.01		9.36	10.70
5030	Stroight butt, double 7"	2 Corp	400	.040	S.F.	3.25	1.83		5.08	6.40
5032	Carnerpost for above	1 Corp	365	.022	L.F.	11.20	1.01		12.21	13.85
6000	Accessories, J channel, 5/8" pocket	2 Corp	700	.023		.44	1.05		1.49	2.10
6010	3/4" pocket		695	.023		.46	1.06		1.52	2.13
6020	1-1/4" pocket		680	.024		.70	1.08		1.78	2.43
6030	Aluminum storter strip	▼	700	.023	▼	.26	1.05		1.31	1.90

07 46 46 – Fiber Cement Siding

07 46 46.10 Fiber Cement Siding

0010	FIBER CEMENT SIDING									
0020	Lap siding, 5/16" thick, 6" wide, 4-3/4" exposure, smooth texture	2 Corp	415	.039	S.F.	1.21	1.77		2.98	4.06
0025	Woodgroin texture		415	.039		1.21	1.77		2.98	4.06
0030	7-1/2" wide, 6-1/4" exposure, smooth texture		425	.038		1.42	1.73		3.15	4.22
0035	Woodgroin texture		425	.038		1.42	1.73		3.15	4.22
0040	8" wide, 6-3/4" exposure, smooth texture		425	.038		1.55	1.73		3.28	4.36
0045	Roughsown texture		425	.038		1.55	1.73		3.28	4.36
0050	9-1/2" wide, 8-1/4" exposure, smooth texture	▼	440	.036	▼	1.54	1.67		3.21	4.27

07 46 Siding

07 46 46 – Fiber Cement Siding

07 46 46.10 Fiber Cement Siding		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0055	Woodgroin texture	2 Corp	440	.036	S.F.	1.54	1.67		3.21	4.27
0060	12" wide, 10-3/8" exposure, smooth texture		455	.035		1.34	1.61		2.95	3.96
0065	Woodgroin texture		455	.035		1.34	1.61		2.95	3.96
0070	Panel siding, 5/16" thick, smooth texture		750	.021		1.31	.98		2.29	2.95
0075	Stucco texture		750	.021		1.31	.98		2.29	2.95
0080	Grooved woodgroin texture		750	.021		1.31	.98		2.29	2.95
0085	V-grooved woodgroin texture		750	.021		1.31	.98		2.29	2.95
0088	Shingle siding, 48" x 15-1/4" panels, 7" exposure		700	.023		4	1.05		5.05	6
0090	Wood starter strip		400	.040	L.F.	.42	1.83		2.25	3.29

07 46 73 – Soffit

07 46 73.10 Soffit Options

0010	SOFFIT OPTIONS									
0012	Aluminum, residential, .020" thick	1 Corp	210	.038	S.F.	1.87	1.75		3.62	4.76
0100	Baked enamel on steel, 16 or 18 ga.		105	.076		5.80	3.49		9.29	11.80
0300	Polyvinyl chloride, white, solid		230	.035		2.04	1.59		3.63	4.70
0400	Perforated		230	.035		2.04	1.59		3.63	4.70
0500	For colors, odd					.12			.12	.13

07 51 Built-Up Bituminous Roofing

07 51 13 – Built-Up Asphalt Roofing

07 51 13.10 Built-Up Roofing Components

0010	BUILT-UP ROOFING COMPONENTS									
0012	Asphalt saturated felt, #30, 2 square per roll	1 Rofc	58	.138	Sq.	10.80	5.40		16.20	21
0200	#15, 4 sq. per roll, plain or perforated, not mopped		58	.138		5.40	5.40		10.80	15.15
0300	Roll roofing, smooth, #65		15	.533		9.65	21		30.65	46
0500	#90		12	.667		35	26		61	83
0520	Mineralized		12	.667		35	26		61	83
0540	D.C. (Double coverage), 19" selvage edge		10	.800		52	31.50		83.50	111
0580	Adhesive (top cement)				Gol.	8.50			8.50	9.35
0800	Steep, flat or dead level asphalt, 10 ton lots, pockaged				Ton	915			915	1,000

07 51 13.13 Cold-Applied Built-Up Asphalt Roofing

0010	COLD-APPLIED BUILT-UP ASPHALT ROOFING									
0020	3 ply system, installation only (components listed below)	G-5	50	.800	Sq.		28.50	3.98	32.48	53
0100	Spunbond poly. fabric, 1.35 oz./S.Y., 36"W, 10.8 sq./roll				Eq.	134			134	147
0500	Base & finish coat, 3 gal./sq., 5 gal./con				Gol.	7.75			7.75	8.50
0600	Coating, ceramic granules, 1/2 sq./bog				Eq.	21.50			21.50	23.50
0700	Aluminum, 2 gal./sq.				Gol.	11.80			11.80	13
0800	Emulsion, fibered or non-fibered, 4 gal./sq.				"	6.35			6.35	6.95

07 51 13.20 Built-Up Roofing Systems

0010	BUILT-UP ROOFING SYSTEMS									
0120	Asphalt flood coat with gravel/slag surfacing, not including									
0140	Insulation, flashing or wood nailers									
0200	Asphalt base sheet, 3 plies #15 asphalt felt, mopped	G-1	22	2.545	Sq.	98.50	93	25	216.50	295
0350	On nailable decks		21	2.667		101	97.50	26.50	225	305
0500	4 plies #15 asphalt felt, mopped		20	2.800		134	102	27.50	263.50	355
0550	On nailable decks		19	2.947		119	108	29	256	345
0700	Coated glass base sheet, 2 plies glass (type IV), mopped		22	2.545		106	93	25	224	305
0850	3 plies glass, mopped		20	2.800		129	102	27.50	258.50	345
0950	On nailable decks		19	2.947		121	108	29	258	350
1100	4 plies glass fiber felt (type IV), mopped		20	2.800		159	102	27.50	288.50	380

07 51 Built-Up Bituminous Roofing

07 51 13 – Built-Up Asphalt Roofing

07 51 13.20 Built-Up Roofing Systems		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labar	Equipment		
1150	On nailable decks	G-1	19	2.947	Sq.	143	108	29	280	375
1200	Coated & saturated base sheet, 3 plies #15 asph. felt, mapped		20	2.800		111	102	27.50	240.50	325
1250	On nailable decks		19	2.947		103	108	29	240	330
1300	4 plies #15 asphalt felt, mapped	▼	22	2.545	▼	129	93	25	247	330
2000	Asphalt flood coat, smooth surface									
2200	Asphalt base sheet & 3 plies #15 asphalt felt, mopped	G-1	24	2.333	Sq.	104	85.50	23	212.50	285
2400	On nailable decks		23	2.435		96	89	24	209	285
2600	4 plies #15 asphalt felt, mopped		24	2.333		122	85.50	23	230.50	305
2700	On nailable decks		23	2.435		114	89	24	227	305
2900	Coated glass fiber base sheet, mopped, and 2 plies of									
2910	gloss fiber felt (type IV)	G-1	25	2.240	Sq.	102	82	22	206	276
3100	On nailable decks		24	2.333		96	85.50	23	204.50	277
3200	3 plies, mapped		23	2.435		124	89	24	237	315
3300	On nailable decks		22	2.545		117	93	25	235	315
3800	4 plies glass fiber felt (type IV), mopped		23	2.435		147	89	24	260	340
3900	On nailable decks		22	2.545		139	93	25	257	340
4000	Coated & saturated base sheet, 3 plies #15 asph. felt, mopped		24	2.333		106	85.50	23	214.50	288
4200	On nailable decks		23	2.435		98.50	89	24	211.50	287
4300	4 plies #15 organic felt, mapped	▼	22	2.545	▼	125	93	25	243	325
4500	Cool tar pitch with gravel/slag surfacing									
4600	4 plies #15 tarred felt, mapped	G-1	21	2.667	Sq.	234	97.50	26.50	358	450
4800	3 plies gloss fiber felt (type IV), mopped	"	19	2.947	"	193	108	29	330	430
5000	Coated glass fiber base sheet, and 2 plies of									
5010	gloss fiber felt, (type IV), mapped	G-1	19	2.947	Sq.	196	108	29	333	430
5300	On nailable decks		18	3.111		170	114	31	315	415
5600	4 plies glass fiber felt (type IV), mapped		21	2.667		264	97.50	26.50	388	485
5800	On nailable decks	▼	20	2.800	▼	238	102	27.50	367.50	465

07 51 13.30 Cants

0010	CANTS									
0012	Lumber, treated, 4" x 4" cut diagonally	1 Rofc	325	.025	L.F.	1.75	.96		2.71	3.57
0300	Minerol or fiber, trapezoidal, 1" x 4" x 48"		325	.025		.24	.96		1.20	1.90
0400	1-1/2" x 5-5/8" x 48"		325	.025		.42	.96		1.38	2.10

07 51 13.40 Felts

0010	FELTS									
0012	Glass fibered roofing felt, #15, nat mapped	1 Rofc	58	.138	Sq.	9.65	5.40		15.05	19.80
0300	Base sheet, #80, chonnel vented		58	.138		42.50	5.40		47.90	56
0400	#70, coated		58	.138		17.20	5.40		22.60	28
0500	Cop, #87, mineral surfaced		58	.138		80	5.40		85.40	97
0600	Flashing membrone, #65		16	.500		9.65	19.60		29.25	44
0800	Coal tar fibered, #15, no mopping		58	.138		18.10	5.40		23.50	29
0900	Asphalt felt, #15, 4 sq. per roll, no mopping		58	.138		5.40	5.40		10.80	15.15
1100	#30, 2 sq. per roll		58	.138		10.80	5.40		16.20	21
1200	Double coated, #33		58	.138		11	5.40		16.40	21.50
1400	#40, base sheet		58	.138		9.65	5.40		15.05	19.80
1450	Coated and saturated		58	.138		12	5.40		17.40	22.50
1500	Torred felt, organic, #15, 4 sq. rolls		58	.138		13.95	5.40		19.35	24.50
1550	#30, 2 sq. roll	▼	58	.138		28	5.40		33.40	39.50
1700	Add for mapping above felts, per ply, asphalt, 24 lb. per sq.	G-1	192	.292		11	10.65	2.88	24.53	33.50
1800	Coal tar mapping, 30 lb. per sq.		186	.301		23	11	2.98	36.98	47.50
1900	Flood coat, with asphalt, 60 lb. per sq.		60	.933		27.50	34	9.25	70.75	98.50
2000	With cool tar, 75 lb. per sq.		56	1		57.50	36.50	9.90	103.90	137

07 51 Built-Up Bituminous Roofing

07 51 13 – Built-Up Asphalt Roofing

07 51 13.50 Walkways for Built-Up Roofs

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WALKWAYS FOR BUILT-UP ROOFS									
0020	Asphalt impregnated, 3' x 6' x 1/2" thick	1 Rofc	400	.020	S.F.	1.56	.78		2.34	3.04
0100	3' x 3' x 3/4" thick	"	400	.020		4.48	.78		5.26	6.25
0300	Concrete potio blacks, 2" thick, natural	1 Clab	115	.070		3.37	2.55		5.92	7.65
0400	Calars	"	115	.070	▼	3.73	2.55		6.28	8.05

07 52 Modified Bituminous Membrane Roofing

07 52 13 – Atactic-Polypropylene-Modified Bituminous Membrane Roofing

07 52 13.10 APP Modified Bituminous Membrane

0010	APP MODIFIED BITUMINOUS MEMBRANE									
					R075213-30					
0020	Bose sheet, #15 glass fiber felt, nailed to deck	1 Rofc	58	.138	Sq.	10.65	5.40		16.05	21
0030	Spat mapped to deck	G-1	295	.190		15.15	6.95	1.88	23.98	30.50
0040	Fully mapped to deck	"	192	.292		20.50	10.65	2.88	34.03	44
0050	#15 orgonic felt, nailed to deck	1 Rofc	58	.138		6.40	5.40		11.80	16.25
0060	Spat mapped to deck	G-1	295	.190		10.90	6.95	1.88	19.73	26
0070	Fully mapped to deck	"	192	.292	▼	16.40	10.65	2.88	29.93	39.50
2100	APP mod., smooth surf. cap sheet, paly. reinf., tarched, 160 mils	G-5	2100	.019	S.F.	.68	.68	.09	1.45	2
2150	170 mils		2100	.019		.70	.68	.09	1.47	2.02
2200	Granule surface cap sheet, paly. reinf., torched, 180 mils		2000	.020		.89	.71	.10	1.70	2.30
2250	Smooth surface flashing, tarched, 160 mils		1260	.032		.68	1.13	.16	1.97	2.84
2300	170 mils		1260	.032		.70	1.13	.16	1.99	2.86
2350	Granule surface flashing, tarched, 180 mils	▼	1260	.032	▼	.89	1.13	.16	2.18	3.07
2400	Fibroted aluminum coating	1 Rofc	3800	.002	▼	.08	.08		.16	.22

07 52 16 – Styrene-Butadiene-Styrene Modified Bituminous Membrane Roofing

07 52 16.10 SBS Modified Bituminous Membrane

0010	SBS MODIFIED BITUMINOUS MEMBRANE									
0080	SBS modified, granule surf cap sheet, polyester reinf., mopped									
0600	150 mils	G-1	2000	.028	S.F.	.65	1.02	.28	1.95	2.76
1100	160 mils		2000	.028		.71	1.02	.28	2.01	2.82
1500	Glass fiber reinforced, mapped, 160 mils		2000	.028		.71	1.02	.28	2.01	2.82
1600	Smaath surface cap sheet, mopped, 145 mils		2100	.027		.78	.98	.26	2.02	2.81
1700	Smaath surface flashing, 145 mils		1260	.044		.78	1.63	.44	2.85	4.11
1800	150 mils		1260	.044		.49	1.63	.44	2.56	3.79
1900	Granular surface flashing, 150 mils		1260	.044		.65	1.63	.44	2.72	3.97
2000	160 mils		1260	.044		.71	1.63	.44	2.78	4.03

07 53 Elastomeric Membrane Roofing

07 53 16 – Chlorosulfonate-Polyethylene Roofing

07 53 16.10 Chlorosulfonated Polyethylene Roofing

0010	CHLOROSULFONATED POLYETHYLENE ROOFING									
0800	Chlorasulfanated polyethylene (CSPE)									
0900	45 mils, heat welded seams, plate attachment	G-5	35	1.143	Sq.	310	40.50	5.70	356.20	415
1100	Heat welded seams, plate attachment and ballasted		26	1.538		320	54.50	7.65	382.15	450
1200	60 mils, heat welded seams, plate attachment		35	1.143	▼	410	40.50	5.70	456.20	525
1300	Heat welded seams, plate attachment and ballasted	▼	26	1.538	▼	415	54.50	7.65	477.15	560

07 53 Elastomeric Membrane Roofing

07 53 23 – Ethylene-Propylene-Diene-Monomer Roofing

07 53 23.20 Ethylene-Propylene-Diene-Monomer Roofing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM)									
3500	Ethylene-propylene-diene-monomer (EPDM), 45 mils, 0.28 psf									
3600	Loose-laid & ballasted with stone (10 psf)	G-5	51	.784	Sq.	83	28	3.91	114.91	143
3700	Mechanically attached		35	1.143		78.50	40.50	5.70	124.70	161
3800	Fully adhered with adhesive	▼	26	1.538	▼	111	54.50	7.65	173.15	223
4500	60 mils, 0.40 psf									
4600	Loose-laid & ballasted with stone (10 psf)	G-5	51	.784	Sq.	97.50	28	3.91	129.41	160
4700	Mechanically attached		35	1.143		92	40.50	5.70	138.20	176
4800	Fully adhered with adhesive	▼	26	1.538		124	54.50	7.65	186.15	238
4810	45 mil, .28 psf, membrane only					50			50	55
4820	60 mil, .40 psf, membrane only					62.50			62.50	69
4850	Seam tape for membrane, 3" x 100' roll				Ea.	39.50			39.50	43.50
4900	Batten strips, 10' sections					3.43			3.43	3.77
4910	Cover tape for batten strips, 6" x 100' roll				▼	186			186	205
4930	Plate anchors				M	75			75	82.50
4970	Adhesive for fully adhered systems, 60 S.F./gal.				Gal.	19.70			19.70	21.50

07 53 29 – Polyisobutylene Roofing

07 53 29.10 Polyisobutylene Roofing

0010	POLYISOBUTYLENE ROOFING									
7500	Polyisobutylene (PIB), 100 mils, 0.57 psf									
7600	Loose-laid & ballasted with stone/gravel (10 psf)	G-5	51	.784	Sq.	200	28	3.91	231.91	272
7700	Partially adhered with adhesive		35	1.143		240	40.50	5.70	286.20	340
7800	Hot asphalt attachment		35	1.143		230	40.50	5.70	276.20	330
7900	Fully adhered with contact cement	▼	26	1.538	▼	250	54.50	7.65	312.15	375

07 54 Thermoplastic Membrane Roofing

07 54 19 – Polyvinyl-Chloride Roofing

07 54 19.10 Polyvinyl-Chloride Roofing (PVC)

0010	POLYVINYL-CHLORIDE ROOFING (PVC)									
8200	Heat welded seams									
8700	Reinforced, 48 mils, 0.33 psf									
8750	Loose-laid & ballasted with stone/gravel (12 psf)	G-5	51	.784	Sq.	117	28	3.91	148.91	180
8800	Mechanically attached	▼	35	1.143		111	40.50	5.70	157.20	197
8850	Fully adhered with adhesive	▼	26	1.538	▼	153	54.50	7.65	215.15	269
8860	Reinforced, 60 mils, .40 psf									
8870	Loose-laid & ballasted with stone/gravel (12 psf)	G-5	51	.784	Sq.	118	28	3.91	149.91	182
8880	Mechanically attached		35	1.143		112	40.50	5.70	158.20	199
8890	Fully adhered with adhesive	▼	26	1.538	▼	154	54.50	7.65	216.15	271

07 54 23 – Thermoplastic-Polyolefin Roofing

07 54 23.10 Thermoplastic Polyolefin Roofing (T.P.O.)

0010	THERMOPLASTIC POLYOLEFIN ROOFING (T.P.O.)									
0100	45 mils, loose laid & ballasted with stone(1/2 ton/sq.)	G-5	51	.784	Sq.	86	28	3.91	117.91	146
0120	Fully adhered		25	1.600		78	57	7.95	142.95	191
0140	Mechanically attached		34	1.176		77	42	5.85	124.85	162
0160	Self adhered		35	1.143		87	40.50	5.70	133.20	171
0180	60 mil membrane, heat welded seams, ballasted		50	.800		98.50	28.50	3.98	130.98	162
0200	Fully adhered		25	1.600		90	57	7.95	154.95	205
0220	Mechanically attached		34	1.176		93.50	42	5.85	141.35	180
0240	Self adhered	▼	35	1.143	▼	107	40.50	5.70	153.20	193

07 55 Protected Membrane Roofing

07 55 10 – Protected Membrane Roofing Components

07 55 10.10 Protected Membrane Roofing Components		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	PROTECTED MEMBRANE ROOFING COMPONENTS									
0100	Choose roofing membrane from 07 50									
0120	Then choose roof deck insulation from 07 22									
0130	Filter fabric	2 Rofc	10000	.002	S.F.	.12	.06		.18	.25
0140	Ballast, 3/8" - 1/2" in place	G-1	36	1.556	Ton	17.10	57	15.40	89.50	133
0150	3/4" - 1-1/2" in place	"	36	1.556	"	17.10	57	15.40	89.50	133
0200	2" concrete blocks, natural	1 Clab	115	.070	S.F.	3.37	2.55		5.92	7.65
0210	Colars	"	115	.070	"	3.73	2.55		6.28	8.05

07 56 Fluid-Applied Roofing

07 56 10 – Fluid-Applied Roofing Elastomers

07 56 10.10 Elastomeric Roofing

0010	ELASTOMERIC ROOFING									
0110	Acrylic rubber, fluid applied, 20 mils thick	G-5	2000	.020	S.F.	1.90	.71	.10	2.71	3.41
0120	50 mils, reinforced		1200	.033		2.90	1.18	.17	4.25	5.40
0130	For walking surface, add		900	.044		.96	1.58	.22	2.76	3.99
0300	Neoprene, fluid applied, 20 mil thick, nat-reinforced	G-1	1135	.049		1.30	1.80	.49	3.59	5.05
0600	Non-woven polyester, reinforced		960	.058		1.42	2.13	.58	4.13	5.80
0700	5 coat neoprene deck, 60 mil thick, under 10,000 S.F.		325	.172		4.32	6.30	1.70	12.32	17.35
0900	Over 10,000 S.F.	▼	625	.090	▼	4.32	3.28	.89	8.49	11.30

07 57 Coated Foamed Roofing

07 57 13 – Sprayed Polyurethane Foam Roofing

07 57 13.10 Sprayed Polyurethane Foam Roofing (S.P.F.)

0010	SPRAYED POLYURETHANE FOAM ROOFING (S.P.F.)									
0100	Primer for metal substrate (when required)	G-2A	3000	.008	S.F.	.42	.28	.25	.95	1.19
0200	Primer for non-metal substrate (when required)		3000	.008		.16	.28	.25	.69	.91
0300	Closed cell spray, polyurethane foam, 3 lb. per C.F. density, 1", R6.7		15000	.002		.66	.06	.05	.77	.87
0400	2", R13.4		13125	.002		1.32	.06	.06	1.44	1.62
0500	3", R18.6		11485	.002		1.98	.07	.06	2.11	2.37
0550	4", R24.8		10080	.002		2.64	.08	.07	2.79	3.13
0700	Spray-on silicone coating	▼	2500	.010		.95	.34	.30	1.59	1.92
0800	Warranty 5-20 year manufacturer's									.15
0900	Warranty 20 year, no dollar limit									.20

07 58 Roll Roofing

07 58 10 – Asphalt Roll Roofing

07 58 10.10 Roll Roofing

0010	ROLL ROOFING									
0100	Asphalt, mineral surface									
0200	1 ply #15 organic felt, 1 ply mineral surfaced									
0300	Selvage roofing, lap 19", nailed & mopped	G-1	27	2.074	Sq.	74	76	20.50	170.50	233
0400	3 plies glass fiber felt (type IV), 1 ply mineral surfaced									
0500	Selvage roofing, lapped 19", mapped	G-1	25	2.240	Sq.	125	82	22	229	300
0600	Coated glass fiber base sheet, 2 plies of glass fiber									
0700	Felt (type IV), 1 ply mineral surfaced selvage									
0800	Roofing, lapped 19", mapped	G-1	25	2.240	Sq.	133	82	22	237	310

07 58 Roll Roofing

07 58 10 – Asphalt Roll Roofing

07 58 10.10 Roll Roofing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0900	On nailable decks	G-1	24	2.333	Sq.	122	85.50	23	230.50	305
1000	3 plies glass fiber felt (type III), 1 ply mineral surfaced									
1100	Selvage roofing, lapped 19", mopped	G-1	25	2.240	Sq.	125	82	22	229	300

07 61 Sheet Metal Roofing

07 61 13 – Standing Seam Sheet Metal Roofing

07 61 13.10 Standing Seam Sheet Metal Roofing, Field Fab.

0010 STANDING SEAM SHEET METAL ROOFING, FIELD FABRICATED										
0400	Copper standing seam roofing, over 10 squares, 16 oz., 125 lb. per sq.	1 Shee	1.30	6.154	Sq.	870	335		1,205	1,475
0600	18 oz., 140 lb. per sq.		1.20	6.667		975	365		1,340	1,625
0700	20 oz., 150 lb. per sq.		1.10	7.273		1,225	400		1,625	1,950
1200	For abnormal conditions or small areas, add					25%	100%			
1300	For lead-coated copper, add					25%				

07 61 16 – Batten Seam Sheet Metal Roofing

07 61 16.10 Batten Seam Sheet Metal Roofing, Field Fabricated

0010 BATTEN SEAM SHEET METAL ROOFING, FIELD FABRICATED										
0012	Copper batten seam roofing, over 10 sq., 16 oz., 130 lb. per sq.	1 Shee	1.10	7.273	Sq.	1,100	400		1,500	1,800
0020	Lead batten seam roofing, 5 lb. per S.F.		1.20	6.667		1,350	365		1,715	2,050
0100	Zinc/copper alloy batten seam roofing, .020 thick		1.20	6.667		1,150	365		1,515	1,825
0200	Copper roofing, batten seam, over 10 sq., 18 oz., 145 lb. per sq.		1	8		1,225	440		1,665	2,025
0300	20 oz., 160 lb. per sq.		1	8		1,550	440		1,990	2,400
0500	Stainless steel batten seam roofing, type 304, 28 ga.		1.20	6.667		555	365		920	1,175
0600	26 ga.		1.15	6.957		515	380		895	1,150
0800	Zinc, copper alloy roofing, batten seam, .027" thick		1.15	6.957		1,450	380		1,830	2,175
0900	.032" thick		1.10	7.273		1,850	400		2,250	2,650
1000	.040" thick		1.05	7.619		2,325	415		2,740	3,175

07 61 19 – Flat Seam Sheet Metal Roofing

07 61 19.10 Flat Seam Sheet Metal Roofing, Field Fabricated

0010 FLAT SEAM SHEET METAL ROOFING, FIELD FABRICATED										
0900	Copper flat seam roofing, over 10 squares, 16 oz., 115 lb./sq.	1 Shee	1.20	6.667	Sq.	805	365		1,170	1,450
0950	18 oz., 130 lb./sq.		1.15	6.957		905	380		1,285	1,575
1000	20 oz., 145 lb./sq.		1.10	7.273		1,150	400		1,550	1,850
1008	Zinc flat seam roofing, .020" thick		1.20	6.667		990	365		1,355	1,650
1010	.027" thick		1.15	6.957		1,250	380		1,630	1,950
1020	.032" thick		1.12	7.143		1,575	390		1,965	2,350
1030	.040" thick		1.05	7.619		1,975	415		2,390	2,800
1100	Lead flat seam roofing, 5 lb. per S.F.		1.30	6.154		1,150	335		1,485	1,800

07 65 Flexible Flashing

07 65 10 – Sheet Metal Flashing

07 65 10.10 Sheet Metal Flashing and Counter Flashing

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SHEET METAL FLASHING AND COUNTER FLASHING									
0011	Including up to 4 bends									
0020	Aluminum, mill finish, .013" thick	1 Rofc	145	.055	S.F.	.79	2.16		2.95	4.55
0030	.016" thick		145	.055		.91	2.16		3.07	4.68
0060	.019" thick		145	.055		1.15	2.16		3.31	4.95
0100	.032" thick		145	.055		1.35	2.16		3.51	5.15
0200	.040" thick		145	.055		2.31	2.16		4.47	6.20
0300	.050" thick		145	.055		2.43	2.16		4.59	6.35
0325	Mill finish 5" x 7" step flashing, .016" thick		1920	.004	Ea.	.15	.16		.31	.45
0350	Mill finish 12" x 12" step flashing, .016" thick		1600	.005	"	.50	.20		.70	.88
0400	Pointed finish, add				S.F.	.29			.29	.32
1000	Mastic-coated 2 sides, .005" thick	1 Rofc	330	.024		1.82	.95		2.77	3.62
1100	.016" thick		330	.024		2.01	.95		2.96	3.83
1600	Copper, 16 oz., sheets, under 1000 lb.		115	.070		6.95	2.72		9.67	12.30
1700	Over 4000 lb.		155	.052		6.95	2.02		8.97	11.10
1900	20 oz. sheets, under 1000 lb.		110	.073		9.85	2.85		12.70	15.70
2000	Over 4000 lb.		145	.055		9.35	2.16		11.51	14
2200	24 oz. sheets, under 1000 lb.		105	.076		12.10	2.98		15.08	18.45
2300	Over 4000 lb.		135	.059		11.50	2.32		13.82	16.60
2500	32 oz. sheets, under 1000 lb.		100	.080		16.15	3.13		19.28	23
2600	Over 4000 lb.		130	.062		15.35	2.41		17.76	21
2700	W shope for volleys, 16 oz., 24" wide		100	.080	L.F.	14	3.13		17.13	21
5800	Lead, 2.5 lb. per S.F., up to 12" wide		135	.059	S.F.	4.99	2.32		7.31	9.45
5900	Over 12" wide		135	.059		3.99	2.32		6.31	8.35
8900	Stainless steel sheets, 32 ga., .010" thick		155	.052		3	2.02		5.02	6.75
9000	28 ga., .015" thick		155	.052		3.99	2.02		6.01	7.85
9100	26 ga., .018" thick		155	.052		4.25	2.02		6.27	8.10
9200	24 ga., .025" thick		155	.052		4.75	2.02		6.77	8.70
9290	For mechanically keyed flashing, odd					40%				
9320	Steel sheets, galvanized, 20 go.	1 Rofc	130	.062	S.F.	1.25	2.41		3.66	5.50
9322	22 go.		135	.059		1.21	2.32		3.53	5.30
9324	24 go.		140	.057		.92	2.24		3.16	4.82
9326	26 go.		145	.055		.80	2.16		2.96	4.56
9328	28 go.		155	.052		.69	2.02		2.71	4.20
9340	30 go.		160	.050		.58	1.96		2.54	3.97
9400	Terne coated stainless steel, .015" thick, 28 go		155	.052		7.35	2.02		9.37	11.55
9500	.018" thick, 26 go		155	.052		8.30	2.02		10.32	12.55
9600	Zinc and copper alloy (brass), .020" thick		155	.052		8.55	2.02		10.57	12.85
9700	.027" thick		155	.052		10.70	2.02		12.72	15.20
9800	.032" thick		155	.052		13.65	2.02		15.67	18.50
9900	.040" thick		155	.052		17.10	2.02		19.12	22

07 65 12 – Fabric and Mastic Flashings

07 65 12.10 Fabric and Mastic Flashing and Counter Flashing

0010	FABRIC AND MASTIC FLASHING AND COUNTER FLASHING									
1300	Asphalt flashing cement, 5 gallon				Gal.	8.45			8.45	9.30
4900	Fabric, asphalt-saturated cotton, specification grade	1 Rofc	35	.229	S.Y.	2.96	8.95		11.91	18.50
5000	Utility grade		35	.229		1.42	8.95		10.37	16.80
5300	Close-mesh fabric, saturated, 17 oz. per S.Y.		35	.229		2.15	8.95		11.10	17.60
5500	Fiberglass, resin-coated		35	.229		.97	8.95		9.92	16.30
8500	Shower pon, bituminous membrone, 7 oz.		155	.052	S.F.	1.62	2.02		3.64	5.20

07 65 Flexible Flashing

07 65 13 – Laminated Sheet Flashing

07 65 13.10 Laminated Sheet Flashing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	LAMINATED SHEET FLASHING , Including up to 4 bends									
0500	Aluminum, fabric-backed 2 sides, .004" thick	1 Rofc	330	.024	S.F.	1.54	.95		2.49	3.31
0700	.005" thick		330	.024		1.82	.95		2.77	3.62
0750	Mastic-backed, self adhesive		460	.017		3.51	.68		4.19	5
0800	Mastic-coated 2 sides, .004" thick		330	.024		1.54	.95		2.49	3.31
2800	Copper, paperbacked 1 side, 2 oz.		330	.024		1.67	.95		2.62	3.46
2900	3 oz.		330	.024		1.97	.95		2.92	3.79
3100	Paperbacked 2 sides, 2 oz.		330	.024		1.72	.95		2.67	3.51
3150	3 oz.		330	.024		2.07	.95		3.02	3.90
3200	5 oz.		330	.024		2.69	.95		3.64	4.58
3250	7 oz.		330	.024		4.81	.95		5.76	6.90
3400	Mastic-backed 2 sides, copper, 2 oz.		330	.024		1.65	.95		2.60	3.44
3500	3 oz.		330	.024		2	.95		2.95	3.82
3700	5 oz.		330	.024		3	.95		3.95	4.92
3800	Fabric-backed 2 sides, copper, 2 oz.		330	.024		1.93	.95		2.88	3.74
4000	3 oz.		330	.024		2.19	.95		3.14	4.03
4100	5 oz.		330	.024		3.13	.95		4.08	5.05
4300	Copper-clad stainless steel, .015" thick, under 500 lb.		115	.070		5.80	2.72		8.52	11.05
4400	Over 2000 lb.		155	.052		5.55	2.02		7.57	9.55
4600	.018" thick, under 500 lb.		100	.080		6.55	3.13		9.68	12.55
4700	Over 2000 lb.		145	.055		6.20	2.16		8.36	10.55
8550	Shower pan, 3 ply copper and fabric, 3 oz.		155	.052		3.13	2.02		5.15	6.90
8600	7 oz.		155	.052		3.99	2.02		6.01	7.85
9300	Stainless steel, paperbacked 2 sides, .005" thick	▼	330	.024	▼	3.62	.95		4.57	5.60

07 65 19 – Plastic Sheet Flashing

07 65 19.10 Plastic Sheet Flashing and Counter Flashing

0010	PLASTIC SHEET FLASHING AND COUNTER FLASHING									
7300	Polyvinyl chloride, black, .010" thick	1 Rofc	285	.028	S.F.	.21	1.10		1.31	2.10
7400	.020" thick		285	.028		.28	1.10		1.38	2.18
7600	.030" thick		285	.028		.35	1.10		1.45	2.26
7700	.056" thick		285	.028		.85	1.10		1.95	2.81
7900	Black or white for exposed roofs, .060" thick	▼	285	.028	▼	1.80	1.10		2.90	3.85
8060	PVC tape, 5" x 45 mils, for joint covers, 100 L.F./roll				Eq.	170			170	187
8850	Polyvinyl chloride, .030" thick	1 Rofc	160	.050	S.F.	1.30	1.96		3.26	4.76

07 65 23 – Rubber Sheet Flashing

07 65 23.10 Rubber Sheet Flashing and Counterflashing

0010	RUBBER SHEET FLASHING AND COUNTERFLASHING									
4810	EPDM 90 mils, 1" diameter pipe flashing	1 Rofc	32	.250	Eq.	19.45	9.80		29.25	38
4820	2" diameter		30	.267		19.45	10.45		29.90	39.50
4830	3" diameter		28	.286		21	11.20		32.20	42
4840	4" diameter		24	.333		24	13.05		37.05	48.50
4850	6" diameter		22	.364	▼	24	14.25		38.25	50.50
8100	Rubber, butyl, 1/32" thick		285	.028	S.F.	1.92	1.10		3.02	3.98
8200	1/16" thick		285	.028		2.60	1.10		3.70	4.73
8300	Neoprene, cured, 1/16" thick		285	.028		2.23	1.10		3.33	4.32
8400	1/8" thick		285	.028		6.05	1.10		7.15	8.50

07 71 Roof Specialties

07 71 19 – Manufactured Gravel Stops and Fasciae

07 71 19.10 Gravel Stop		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
	GRAVEL STOP						Labor	Equipment		
0010	GRAVEL STOP									
0020	Aluminum, .050" thick, 4" face height, mill finish	1 Shee	145	.055	L.F.	6	3.02		9.02	11.20
0080	Duronodic finish		145	.055		6.50	3.02		9.52	11.75
0100	Pointed		145	.055		6.85	3.02		9.87	12.10
0300	6" face height		135	.059		6.45	3.24		9.69	12.05
0350	Duranadic finish		135	.059		6.95	3.24		10.19	12.60
0400	Pointed		135	.059		8.10	3.24		11.34	13.85
0600	8" face height		125	.064		7.30	3.50		10.80	13.35
0650	Duronadic finish		125	.064		8	3.50		11.50	14.15
0700	Pointed		125	.064		8.15	3.50		11.65	14.30
0900	12" face height, .080 thick, 2 piece		100	.080		10.15	4.38		14.53	17.90
0950	Duronadic finish		100	.080		10.05	4.38		14.43	17.75
1000	Pointed		100	.080		11.90	4.38		16.28	19.80
1200	Copper, 16 oz., 3" face height		145	.055		39.50	3.02		42.52	47.50
1300	6" face height		135	.059		39.50	3.24		42.74	48
1350	Golv steel, 24 go., 4" leg, plain, with continuous cleot, 4" face		145	.055		6	3.02		9.02	11.20
1360	6" face height		145	.055		6	3.02		9.02	11.20
1500	Polyvinyl chloride, 6" face height		135	.059		4.90	3.24		8.14	10.35
1600	9" face height		125	.064		5.80	3.50		9.30	11.70
1800	Stainless steel, 24 go., 6" face height		135	.059		9.85	3.24		13.09	15.75
1900	12" face height		100	.080		19.70	4.38		24.08	28
2100	20 go., 6" face height		135	.059		11.90	3.24		15.14	18
2200	12" face height		100	.080		24	4.38		28.38	32.50

07 71 19.30 Fascia

0010	FASCIA									
0100	Aluminum, reverse board and batten, .032" thick, colored, no furring incl	1 Shee	145	.055	S.F.	6.25	3.02		9.27	11.50
0300	Steel, golv and enomeled, stock, no furring, lang panels		145	.055		3.91	3.02		6.93	8.90
0600	Shart panels		115	.070		5.30	3.81		9.11	11.65

07 71 23 – Manufactured Gutters and Downspouts

07 71 23.10 Downspouts

0010	DOWNSPOUTS									
0020	Aluminum 2" x 3", .020" thick, embossed	1 Shee	190	.042	L.F.	.97	2.30		3.27	4.59
0100	Enomeled		190	.042		1.32	2.30		3.62	4.97
0300	Enomeled, .024" thick, 2" x 3"		180	.044		2.05	2.43		4.48	5.95
0400	3" x 4"		140	.057		2.88	3.13		6.01	7.95
0600	Round, corrugated oluminum, 3" diameter, .020" thick		190	.042		1.57	2.30		3.87	5.25
0700	4" diameter, .025" thick		140	.057		2.33	3.13		5.46	7.35
0900	Wire strainer, round, 2" diameter		155	.052	En.	3.92	2.82		6.74	8.60
1000	4" diameter		155	.052		7.20	2.82		10.02	12.25
1200	Rectangular, perforated, 2" x 3"		145	.055		2.30	3.02		5.32	7.15
1300	3" x 4"		145	.055		3.32	3.02		6.34	8.25
1500	Copper, round, 16 oz., stock, 2" diameter		190	.042	L.F.	8.55	2.30		10.85	12.90
1600	3" diameter		190	.042		8.45	2.30		10.75	12.75
1800	4" diameter		145	.055		10.55	3.02		13.57	16.20
1900	5" diameter		130	.062		18.20	3.37		21.57	25
2100	Rectangular, corrugated copper, stock, 2" x 3"		190	.042		8.80	2.30		11.10	13.15
2200	3" x 4"		145	.055		12.20	3.02		15.22	18.05
2400	Rectongular, plain copper, stock, 2" x 3"		190	.042		13.30	2.30		15.60	18.15
2500	3" x 4"		145	.055		16.90	3.02		19.92	23
2700	Wire stainers, rectangular, 2" x 3"		145	.055	En.	13.50	3.02		16.52	19.45
2800	3" x 4"		145	.055		14.65	3.02		17.67	21
3000	Round, 2" diameter		145	.055		5.95	3.02		8.97	11.10

07 71 Roof Specialties

07 71 23 – Manufactured Gutters and Downspouts

07 71 23.10 Downspouts		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
3100	3" diameter	1 Shee	145	.055	Ea.	5.95	3.02		8.97	11.10
3300	4" diameter		145	.055		8	3.02		11.02	13.40
3400	5" diameter		115	.070		19.80	3.81		23.61	28
3600	Lead-coated copper, round, stock, 2" diameter		190	.042	L.F.	25	2.30		27.30	31
3700	3" diameter		190	.042		21.50	2.30		23.80	27
3900	4" diameter		145	.055		22.50	3.02		25.52	29
4000	5" diameter, corrugated		130	.062		24	3.37		27.37	31.50
4200	6" diameter, corrugated		105	.076		30	4.17		34.17	39.50
4300	Rectangular, corrugated, stock, 2" x 3"		190	.042		15	2.30		17.30	20
4500	Plain, stock, 2" x 3"		190	.042		24	2.30		26.30	30
4600	3" x 4"		145	.055		33	3.02		36.02	41
4800	Steel, galvanized, round, corrugated, 2" or 3" diameter, 28 ga.		190	.042		2.08	2.30		4.38	5.80
4900	4" diameter, 28 ga.		145	.055		2.61	3.02		5.63	7.50
5100	5" diameter, 26 ga.		130	.062		3.46	3.37		6.83	8.95
5400	6" diameter, 28 ga.		105	.076		4.20	4.17		8.37	10.95
5500	26 ga.		105	.076		5.80	4.17		9.97	12.75
5700	Rectangular, corrugated, 28 ga., 2" x 3"		190	.042		1.94	2.30		4.24	5.65
5800	3" x 4"		145	.055		1.82	3.02		4.84	6.60
6000	Rectangular, plain, 28 ga., galvanized, 2" x 3"		190	.042		3.03	2.30		5.33	6.85
6100	3" x 4"		145	.055		3.06	3.02		6.08	8
6300	Epoxy painted, 24 ga., corrugated, 2" x 3"		190	.042		2.20	2.30		4.50	5.95
6400	3" x 4"		145	.055		2.75	3.02		5.77	7.65
6600	Wire strainers, rectangular, 2" x 3"		145	.055	Ea.	15.90	3.02		18.92	22
6700	3" x 4"		145	.055		16.60	3.02		19.62	23
6900	Round strainers, 2" or 3" diameter		145	.055		3.86	3.02		6.88	8.85
7000	4" diameter		145	.055	▼	5.80	3.02		8.82	10.95
7800	Stainless steel tubing, schedule 5, 2" x 3" or 3" diameter		190	.042	L.F.	38.50	2.30		40.80	46
7900	3" x 4" or 4" diameter		145	.055		49	3.02		52.02	58.50
8100	4" x 5" or 5" diameter		135	.059		101	3.24		104.24	116
8200	Vinyl, rectangular, 2" x 3"		210	.038		2.08	2.08		4.16	5.45
8300	Round, 2-1/2"	▼	220	.036	▼	1.31	1.99		3.30	4.48

07 71 23.20 Downspout Elbows

0010	DOWNSPOUT ELBOWS									
0020	Aluminum, 2" x 3", embossed	1 Shee	100	.080	Ea.	.95	4.38		5.33	7.75
0100	Enameled		100	.080		1.75	4.38		6.13	8.65
0200	3" x 4", .025" thick, embossed		100	.080		3.50	4.38		7.88	10.55
0300	Enameled		100	.080		3.75	4.38		8.13	10.85
0400	Round corrugated, 3", embossed, .020" thick		100	.080		2.74	4.38		7.12	9.70
0500	4", .025" thick		100	.080		5.80	4.38		10.18	13.05
0600	Copper, 16 oz. round, 2" diameter		100	.080		9.45	4.38		13.83	17.10
0700	3" diameter		100	.080		9	4.38		13.38	16.60
0800	4" diameter		100	.080		13.15	4.38		17.53	21
1000	2" x 3" corrugated		100	.080		9	4.38		13.38	16.60
1100	3" x 4" corrugated		100	.080		13.65	4.38		18.03	21.50
1300	Vinyl, 2-1/2" diameter, 45° or 75°		100	.080		3.88	4.38		8.26	10.95
1400	Tee Y junction	▼	75	.107	▼	12.90	5.85		18.75	23

07 71 23.30 Gutters

0010	GUTTERS									
0012	Aluminum, stock units, 5" K type, .027" thick, plain	1 Shee	125	.064	L.F.	2.61	3.50		6.11	8.20
0100	Enameled		125	.064		2.60	3.50		6.10	8.20
0300	5" K type type, .032" thick, plain		125	.064		3.20	3.50		6.70	8.85
0400	Enameled	▼	125	.064	▼	3	3.50		6.50	8.65

07 71 Roof Specialties

07 71 23 – Manufactured Gutters and Downspouts

07 71 23.30 Gutters		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0700	Copper, half round, 16 oz., stock units, 4" wide	1 Shee	125	.064	L.F.	10.50	3.50		14	16.90
0900	5" wide		125	.064		7.70	3.50		11.20	13.80
1000	6" wide		118	.068		14	3.71		17.71	21
1200	K type, 16 oz., stock, 5" wide		125	.064		12.60	3.50		16.10	19.20
1300	6" wide		125	.064		8.80	3.50		12.30	15.05
1500	Lead coated copper, half round, stock, 4" wide		125	.064		13.80	3.50		17.30	20.50
1600	6" wide		118	.068		22	3.71		25.71	30
1800	K type, stock, 5" wide		125	.064		18.90	3.50		22.40	26.50
1900	6" wide		125	.064		18.40	3.50		21.90	25.50
2100	Copper clad stainless steel, K type, 5" wide		125	.064		7	3.50		10.50	13.05
2200	6" wide		125	.064		8.90	3.50		12.40	15.15
2400	Steel, galv, half round or box, 28 ga., 5" wide, plain		125	.064		2.18	3.50		5.68	7.75
2500	Enameled		125	.064		2.13	3.50		5.63	7.70
2700	26 ga., stock, 5" wide		125	.064		2.18	3.50		5.68	7.75
2800	6" wide		125	.064		2.67	3.50		6.17	8.30
3000	Vinyl, O.G., 4" wide	1 Corp	115	.070		1.19	3.19		4.38	6.25
3100	5" wide		115	.070		1.55	3.19		4.74	6.65
3200	4" half round, stock units	▼	115	.070	▼	1.28	3.19		4.47	6.35
3250	Joint connectors				EO.	2.88			2.88	3.17
3300	Wood, clear treated cedar, fir or hemlock, 3" x 4"	1 Corp	100	.080	L.F.	12.40	3.67		16.07	19.30
3400	4" x 5"	"	100	.080	"	19.45	3.67		23.12	27
5000	Accessories, end cap, K type, aluminum 5"	1 Shee	625	.013	EO.	.66	.70		1.36	1.80
5010	6"		625	.013		1.44	.70		2.14	2.65
5020	Copper, 5"		625	.013		3.89	.70		4.59	5.35
5030	6"		625	.013		3.54	.70		4.24	4.96
5040	Lead coated copper, 5"		625	.013		12.50	.70		13.20	14.80
5050	6"		625	.013		13.35	.70		14.05	15.75
5060	Copper clad stainless steel, 5"		625	.013		3	.70		3.70	4.37
5070	6"		625	.013		3.60	.70		4.30	5.05
5080	Galvanized steel, 5"		625	.013		1.28	.70		1.98	2.48
5090	6"		625	.013		2.18	.70		2.88	3.47
5100	Vinyl, 4"	1 Corp	625	.013		5.80	.59		6.39	7.30
5110	5"	"	625	.013		6.10	.59		6.69	7.60
5120	Half round, copper, 4"	1 Shee	625	.013		4.40	.70		5.10	5.90
5130	5"		625	.013		4.72	.70		5.42	6.25
5140	6"		625	.013		5.15	.70		5.85	6.70
5150	Lead coated copper, 5"		625	.013		14.15	.70		14.85	16.60
5160	6"		625	.013		21	.70		21.70	24.50
5170	Copper clad stainless steel, 5"		625	.013		4.50	.70		5.20	6
5180	6"		625	.013		4.50	.70		5.20	6
5190	Galvanized steel, 5"		625	.013		2.25	.70		2.95	3.55
5200	6"		625	.013		2.80	.70		3.50	4.15
5210	Outlet, aluminum, 2" x 3"		420	.019		.62	1.04		1.66	2.27
5220	3" x 4"		420	.019		1.05	1.04		2.09	2.75
5230	2-3/8" round		420	.019		.56	1.04		1.60	2.21
5240	Copper, 2" x 3"		420	.019		6.50	1.04		7.54	8.75
5250	3" x 4"		420	.019		7.85	1.04		8.89	10.25
5260	2-3/8" round		420	.019		4.55	1.04		5.59	6.60
5270	Lead coated copper, 2" x 3"		420	.019		25.50	1.04		26.54	29.50
5280	3" x 4"		420	.019		28.50	1.04		29.54	33
5290	2-3/8" round		420	.019		25.50	1.04		26.54	29.50
5300	Copper clad stainless steel, 2" x 3"		420	.019		6.50	1.04		7.54	8.75
5310	3" x 4"		420	.019		7.85	1.04		8.89	10.25

07 71 Roof Specialties

07 71 23 – Manufactured Gutters and Downspouts

07 71 23.30 Gutters		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5320	2-3/8" round	1 Shee	420	.019	Eq.	4.55	1.04		5.59	6.60
5330	Golvonized steel, 2" x 3"		420	.019		3.18	1.04		4.22	5.10
5340	3" x 4"		420	.019		4.90	1.04		5.94	7
5350	2-3/8" round		420	.019		3.98	1.04		5.02	5.95
5360	K type mitres, oluminum		65	.123		3	6.75		9.75	13.60
5370	Copper		65	.123		17.40	6.75		24.15	29.50
5380	Lead coated copper		65	.123		54.50	6.75		61.25	70.50
5390	Copper clod stoinless steel		65	.123		27.50	6.75		34.25	41
5400	Golvonized steel		65	.123		22.50	6.75		29.25	35.50
5420	Holf round mitres, copper		65	.123		63.50	6.75		70.25	80.50
5430	Lead coated copper		65	.123		89.50	6.75		96.25	109
5440	Copper clod stoinless steel		65	.123		56	6.75		62.75	72.50
5450	Golvonized steel		65	.123		25.50	6.75		32.25	38.50
5460	Vinyl mitres ond outlets		65	.123	▼	9.75	6.75		16.50	21
5470	Seolont		940	.009	L.F.	.01	.47		.48	.72
5480	Soldering		96	.083	"	.20	4.56		4.76	7.15

07 71 23.35 Gutter Guard

0010	GUTTER GUARD									
0020	6" wide strip, oluminum mesh	1 Corp	500	.016	L.F.	2.17	.73		2.90	3.52
0100	Vinyl mesh	"	500	.016	"	2.25	.73		2.98	3.61

07 71 26 – Reglets

07 71 26.10 Reglets and Accessories

0010	REGLETS AND ACCESSORIES									
0020	Aluminum, .025" thick, in concrete poropet	1 Corp	225	.036	L.F.	1.84	1.63		3.47	4.54
0300	16 oz.		225	.036		5.85	1.63		7.48	8.90
0400	Golvonized steel, 24 go.		225	.036		1.28	1.63		2.91	3.93
0600	Stoinless steel, .020" thick	▼	225	.036		3.64	1.63		5.27	6.50
0900	Counter flosling for above, 12" wide, .032" oluminum	1 Shee	150	.053		2.29	2.92		5.21	7
1200	16 oz.		150	.053		5.45	2.92		8.37	10.45
1300	Golvonized steel, .020" thick		150	.053		1.29	2.92		4.21	5.90
1500	Stoinless steel, .020" thick		150	.053		5.70	2.92		8.62	10.70

07 71 29 – Manufactured Roof Expansion Joints

07 71 29.10 Expansion Joints

0010	EXPANSION JOINTS									
0300	Butyl or neoprene center with foom insulotion, metol flonges									
0400	Aluminum, .032" thick for openings to 2-1/2"	1 Rofc	165	.048	L.F.	18.40	1.90		20.30	23
0600	For joint openings to 3-1/2"		165	.048		18.40	1.90		20.30	23
0610	For joint openings to 5"		165	.048		18.90	1.90		20.80	24
0620	For joint openings to 8"		165	.048		21	1.90		22.90	26
0700	Copper, 16 oz. for openings to 2-1/2"		165	.048		28.50	1.90		30.40	34
0900	For joint openings to 3-1/2"		165	.048		28.50	1.90		30.40	34
0910	For joint openings to 5"		165	.048		29	1.90		30.90	35
0920	For joint openings to 8"		165	.048		31	1.90		32.90	37
1000	Golvonized steel, 26 go. for openings to 2-1/2"		165	.048		14.85	1.90		16.75	19.60
1200	For joint openings to 3-1/2"		165	.048		14.85	1.90		16.75	19.60
1210	For joint openings to 5"		165	.048		16	1.90		17.90	21
1220	For joint openings to 8"		165	.048		19.85	1.90		21.75	25
1300	Lead-coated copper, 16 oz. for openings to 2-1/2"		165	.048		35	1.90		36.90	41.50
1500	For joint openings to 3-1/2"		165	.048		40	1.90		41.90	47
1600	Stoinless steel, .018", for openings to 2-1/2"		165	.048		20	1.90		21.90	25
1800	For joint openings to 3-1/2"		165	.048		17.90	1.90		19.80	23

07 71 Roof Specialties

07 71 29 – Manufactured Roof Expansion Joints

07 71 29.10 Expansion Joints		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1810	For joint openings to 5"	1 Rafc	165	.048	L.F.	18.60	1.90		20.50	23.50
1820	For joint openings to 8"		165	.048		22	1.90		23.90	27
1900	Neoprene, double-seal type with thick center, 4-1/2" wide		125	.064		15	2.51		17.51	21
1950	Polyethylene bellows, with galv steel flat flanges		100	.080		6	3.13		9.13	11.95
1960	With galvanized angle flanges		100	.080		6.50	3.13		9.63	12.50
2000	Roof joint with extruded aluminum cover, 2"	1 Shee	115	.070		38	3.81		41.81	48
2100	Roof joint, plastic curbs, foam center, standard	1 Rafc	100	.080		15	3.13		18.13	22
2200	Large		100	.080		19	3.13		22.13	26.50
2300	Transitions, regular, minimum		10	.800	Ea.	120	31.50		151.50	186
2350	Maximum		4	2		150	78.50		228.50	299
2400	Large, minimum		9	.889		175	35		210	252
2450	Maximum		3	2.667		185	104		289	380
2500	Roof to wall joint with extruded aluminum cover	1 Shee	115	.070	L.F.	32	3.81		35.81	41
2700	Wall joint, closed cell foam on PVC cover, 9" wide	1 Rafc	125	.064		5	2.51		7.51	9.75
2800	12" wide	"	115	.070		6	2.72		8.72	11.25

07 71 43 – Drip Edge

07 71 43.10 Drip Edge, Rake Edge, Ice Belts

0010	DRIP EDGE, RAKE EDGE, ICE BELTS									
0020	Aluminum, .016" thick, 5" wide, mill finish	1 Carp	400	.020	L.F.	.40	.92		1.32	1.86
0100	White finish		400	.020		.41	.92		1.33	1.87
0200	8" wide, mill finish		400	.020		.69	.92		1.61	2.18
0300	Ice belt, 28" wide, mill finish		100	.080		3.85	3.67		7.52	9.90
0310	Vented, mill finish		400	.020		2.86	.92		3.78	4.57
0320	Painted finish		400	.020		2.90	.92		3.82	4.61
0400	Galvanized, 5" wide		400	.020		.53	.92		1.45	2
0500	8" wide, mill finish		400	.020		.69	.92		1.61	2.18
0510	Rake edge, aluminum, 1-1/2" x 1-1/2"		400	.020		.30	.92		1.22	1.75
0520	3-1/2" x 1-1/2"		400	.020		.41	.92		1.33	1.87

07 72 Roof Accessories

07 72 23 – Relief Vents

07 72 23.10 Roof Vents

0010	ROOF VENTS									
0020	Mushroom shape, for built-up roofs, aluminum	1 Rafc	30	.267	Ea.	108	10.45		118.45	137
0100	PVC, 6" high	"	30	.267	"	28.50	10.45		38.95	49.50

07 72 26 – Ridge Vents

07 72 26.10 Ridge Vents and Accessories

0010	RIDGE VENTS AND ACCESSORIES									
0100	Aluminum strips, mill finish	1 Rafc	160	.050	L.F.	2.75	1.96		4.71	6.35
0150	Painted finish		160	.050	"	4.05	1.96		6.01	7.80
0200	Connectors		48	.167	Ea.	4.65	6.55		11.20	16.20
0300	End caps		48	.167	"	1.98	6.55		8.53	13.30
0400	Galvanized strips		160	.050	L.F.	3.58	1.96		5.54	7.25
0430	Molded polyethylene, shingles not included		160	.050	"	2.74	1.96		4.70	6.35
0440	End plugs		48	.167	Ea.	1.98	6.55		8.53	13.30
0450	Flexible roll, shingles not included		160	.050	L.F.	2.38	1.96		4.34	5.95
2300	Ridge vent strip, mill finish	1 Shee	155	.052	"	2.98	2.82		5.80	7.60

07 72 Roof Accessories

07 72 33 – Roof Hatches

07 72 33.10 Roof Hatch Options		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	ROOF HATCH OPTIONS									
0500	2'-6" x 3', aluminum curb and cover	G-3	10	3.200	Ea.	1,075	146		1,221	1,400
0520	Galvanized steel curb and aluminum cover		10	3.200		640	146		786	930
0540	Galvanized steel curb and cover		10	3.200		635	146		781	920
0600	2'-6" x 4'-6", aluminum curb and cover		9	3.556		915	162		1,077	1,250
0800	Galvanized steel curb and aluminum cover		9	3.556		885	162		1,047	1,225
0900	Galvanized steel curb and cover		9	3.556		890	162		1,052	1,225
1100	4' x 4' aluminum curb and cover		8	4		1,800	183		1,983	2,250
1120	Galvanized steel curb and aluminum cover		8	4		1,725	183		1,908	2,175
1140	Galvanized steel curb and cover		8	4		1,700	183		1,883	2,150
1200	2'-6" x 8'-0", aluminum curb and cover		6.60	4.848		1,800	221		2,021	2,325
1400	Galvanized steel curb and aluminum cover		6.60	4.848		1,800	221		2,021	2,325
1500	Galvanized steel curb and cover		6.60	4.848		1,425	221		1,646	1,925
1800	For plexiglass panels, 2'-6" x 3'-0", add to above					440			440	485

07 72 36 – Smoke Vents

07 72 36.10 Smoke Hatches

0010	SMOKE HATCHES									
0200	For 3'-0" long, add to roof hatches from Section 07 72 33.10				Ea.	25%	5%			
0250	For 4'-0" long, add to roof hatches from Section 07 72 33.10					20%	5%			
0300	For 8'-0" long, add to roof hatches from Section 07 72 33.10					10%	5%			

07 72 36.20 Smoke Vent Options

0010	SMOKE VENT OPTIONS									
0100	4' x 4' aluminum cover and frame	G-3	13	2.462	Ea.	2,050	112		2,162	2,425
0200	Galvanized steel cover and frame		13	2.462		1,800	112		1,912	2,150
0300	4' x 8' aluminum cover and frame		8	4		2,800	183		2,983	3,350
0400	Galvanized steel cover and frame		8	4		2,375	183		2,558	2,900

07 72 53 – Snow Guards

07 72 53.10 Snow Guard Options

0010	SNOW GUARD OPTIONS									
0100	Slate & asphalt shingle roofs, fastened with nails	1 Rafc	160	.050	Ea.	12.55	1.96		14.51	17.15
0200	Standing seam metal roofs, fastened with set screws		48	.167		16.95	6.55		23.50	30
0300	Surface mount for metal roofs, fastened with salder		48	.167		6.05	6.55		12.60	17.75
0400	Double rail pipe type, including pipe		130	.062	L.F.	32	2.41		34.41	39

07 72 73 – Pitch Pockets

07 72 73.10 Pitch Pockets, Variable Sizes

0010	PITCH POCKETS, VARIABLE SIZES									
0100	Adjustable, 4" to 7", welded corners, 4" deep	1 Rafc	48	.167	Ea.	15.75	6.55		22.30	28.50
0200	Side extenders, 6"	"	240	.033	"	2.15	1.30		3.45	4.59

07 72 80 – Vents

07 72 80.30 Vent Options

0010	VENT OPTIONS									
0020	Plastic, for insulated decks, 1 per M.S.F., minimum	1 Rafc	40	.200	Ea.	19.15	7.85		27	34.50
0100	Maximum		20	.400		36	15.65		51.65	66
0300	Aluminum		30	.267		19.50	10.45		29.95	39.50
0800	Polystyrene baffles, 12" wide for 16" O.C. rafter spacing	1 Corp	90	.089		.40	4.08		4.48	6.75
0900	For 24" O.C. rafter spacing	"	110	.073		.75	3.33		4.08	6

07 76 Roof Pavers

07 76 16 – Roof Decking Pavers

07 76 16.10 Roof Pavers and Supports		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 ROOF PAVERS AND SUPPORTS							Labor	Equipment		
1000	Roof decking pavers, concrete blocks, 2" thick, noturol	1 Clob	115	.070	S.F.	3.37	2.55		5.92	7.65
1100	Colors		115	.070	"	3.73	2.55		6.28	8.05
1200	Support pedestal, bottom cop		960	.008	Eo.	2.99	.31		3.30	3.76
1300	Top cop		960	.008		4.79	.31		5.10	5.70
1400	Leveling shims, 1/16"		1920	.004		1.19	.15		1.34	1.55
1500	1/8"		1920	.004		1.19	.15		1.34	1.55
1600	Buffer pod		960	.008		2.49	.31		2.80	3.21
1700	PVC legs (4" SDR 35)		2880	.003	Inch	.12	.10		.22	.29
2000	Alternote pricing method, system in place		101	.079	S.F.	7	2.90		9.90	12.20

07 81 Applied Fireproofing

07 81 16 – Cementitious Fireproofing

07 81 16.10 Sprayed Cementitious Fireproofing

0010 SPRAYED CEMENTITIOUS FIREPROOFING										
0050	Not including convos protection, normal density									
0100	Per 1" thick, on flat plate steel	G-2	3000	.008	S.F.	.53	.31	.05	.89	1.10
0200	Flat decking		2400	.010		.53	.39	.06	.98	1.23
0400	Beoms		1500	.016		.53	.62	.09	1.24	1.62
0500	Corrugated or fluted decks		1250	.019		.79	.74	.11	1.64	2.11
0700	Columns, 1-1/8" thick		1100	.022		.59	.84	.12	1.55	2.06
0800	2-3/16" thick		700	.034		1.20	1.32	.19	2.71	3.54
0900	For convos protection, odd		5000	.005		.07	.19	.03	.29	.39
1500	Intumescent epoxy fireproofing on wire mesh, 3/16" thick									
1550	1 hour rating, exterior use	G-2	136	.176	S.F.	7.30	6.80	.99	15.09	19.50
1600	Mogesium oxychloride, 35# to 40# density, 1/4" thick		3000	.008		1.53	.31	.05	1.89	2.20
1650	1/2" thick		2000	.012		3.09	.46	.07	3.62	4.17
1700	60# to 70# density, 1/4" thick		3000	.008		2.04	.31	.05	2.40	2.76
1750	1/2" thick		2000	.012		4.10	.46	.07	4.63	5.30
2000	Vermiculite cement, troweled or sroyed, 1/4" thick		3000	.008		1.39	.31	.05	1.75	2.05
2050	1/2" thick		2000	.012		2.77	.46	.07	3.30	3.82

07 84 Firestopping

07 84 13 – Penetration Firestopping

07 84 13.10 Firestopping

0010 FIRESTOPPING		R078413-30								
0100	Metollic piping, non insulated									
0110	Through wolls, 2" diameter	1 Corp	16	.500	Eo.	15.90	23		38.90	53
0120	4" diameter		14	.571		24.50	26		50.50	67
0130	6" diameter		12	.667		32.50	30.50		63	83
0140	12" diameter		10	.800		57.50	36.50		94	120
0150	Through floors, 2" diameter		32	.250		9.65	11.45		21.10	28.50
0160	4" diameter		28	.286		13.85	13.10		26.95	35.50
0170	6" diameter		24	.333		18.20	15.30		33.50	43.50
0180	12" diameter		20	.400		31	18.35		49.35	62.50
0190	Metollic piping, insulated									
0200	Through wolls, 2" diameter	1 Corp	16	.500	Eo.	22.50	23		45.50	60.50
0210	4" diameter		14	.571		31	26		57	74.50
0220	6" diameter		12	.667		39	30.50		69.50	90

07 84 Firestopping

07 84 13 – Penetration Firestopping

07 84 13.10 Firestopping		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0230	12" diameter	1 Corp	10	.800	Ea.	64	36.50		100.50	127
0240	Through floors, 2" diameter		32	.250		16.30	11.45		27.75	35.50
0250	4" diameter		28	.286		20.50	13.10		33.60	42.50
0260	6" diameter		24	.333		25	15.30		40.30	51
0270	12" diameter		20	.400		31	18.35		49.35	62.50
0280	Non metallic piping, non insulated									
0290	Through walls, 2" diameter	1 Corp	12	.667	Ea.	65.50	30.50		96	119
0300	4" diameter		10	.800		82	36.50		118.50	147
0310	6" diameter		8	1		114	46		160	197
0330	Through floors, 2" diameter		16	.500		51.50	23		74.50	92
0340	4" diameter		6	1.333		63.50	61		124.50	165
0350	6" diameter		6	1.333		76.50	61		137.50	179
0370	Ductwork, insulated & non insulated, round									
0380	Through walls, 6" diameter	1 Corp	12	.667	Ea.	33.50	30.50		64	83.50
0390	12" diameter		10	.800		66	36.50		102.50	129
0400	18" diameter		8	1		108	46		154	190
0410	Through floors, 6" diameter		16	.500		18.20	23		41.20	55.50
0420	12" diameter		14	.571		33.50	26		59.50	77
0430	18" diameter		12	.667		57.50	30.50		88	111
0440	Ductwork, insulated & non insulated, rectangular									
0450	With stiffener/closure angle, through walls, 6" x 12"	1 Corp	8	1	Ea.	27.50	46		73.50	102
0460	12" x 24"		6	1.333		36.50	61		97.50	135
0470	24" x 48"		4	2		105	91.50		196.50	257
0480	With stiffener/closure angle, through floors, 6" x 12"		10	.800		14.95	36.50		51.45	73
0490	12" x 24"		8	1		27	46		73	101
0500	24" x 48"		6	1.333		52.50	61		113.50	153
0510	Multi trade openings									
0520	Through walls, 6" x 12"	1 Corp	2	4	Ea.	57.50	183		240.50	345
0530	12" x 24"	"	1	8		234	365		599	820
0540	24" x 48"	2 Corp	1	16		935	735		1,670	2,150
0550	48" x 96"	"	.75	21.333		3,750	980		4,730	5,625
0560	Through floors, 6" x 12"	1 Corp	2	4		57.50	183		240.50	345
0570	12" x 24"	"	1	8		234	365		599	820
0580	24" x 48"	2 Corp	.75	21.333		935	980		1,915	2,525
0590	48" x 96"	"	.50	32		3,750	1,475		5,225	6,400
0600	Structural penetrations, through walls									
0610	Steel beams, W8 x 10	1 Corp	8	1	Ea.	36.50	46		82.50	111
0620	W12 x 14		6	1.333		57.50	61		118.50	158
0630	W21 x 44		5	1.600		116	73.50		189.50	241
0640	W36 x 135		3	2.667		282	122		404	500
0650	Bar joists, 18" deep		6	1.333		53.50	61		114.50	153
0660	24" deep		6	1.333		66	61		127	167
0670	36" deep		5	1.600		99.50	73.50		173	222
0680	48" deep		4	2		116	91.50		207.50	270
0690	Construction joints, floor slab at exterior wall									
0700	Precast, brick, block or drywall exterior									
0710	2" wide joint	1 Corp	125	.064	L.F.	8.30	2.93		11.23	13.65
0720	4" wide joint	"	75	.107	"	16.55	4.89		21.44	26
0730	Metal panel, glass or curtain wall exterior									
0740	2" wide joint	1 Corp	40	.200	L.F.	19.60	9.15		28.75	35.50
0750	4" wide joint	"	25	.320	"	27	14.65		41.65	52
0760	Floor slab to drywall partition									
0770	Flat joint	1 Corp	100	.080	L.F.	8.15	3.67		11.82	14.60

07 84 Firestopping

07 84 13 – Penetration Firestopping

07 84 13.10 Firestopping		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0780	Fluted joint	1 Carp	50	.160	L.F.	16.55	7.35		23.90	29.50
0790	Etched fluted joint	↓	75	.107	↓	10.75	4.89		15.64	19.40
0800	Floor slab to concrete/masonry partition									
0810	Flat joint	1 Carp	75	.107	L.F.	18.20	4.89		23.09	27.50
0820	Fluted joint	"	50	.160	"	21.50	7.35		28.85	35
0830	Concrete/CMU wall joints									
0840	1" wide	1 Carp	100	.080	L.F.	9.95	3.67		13.62	16.55
0850	2" wide		75	.107		18.20	4.89		23.09	27.50
0860	4" wide	↓	50	.160	↓	34.50	7.35		41.85	49.50
0870	Concrete/CMU floor joints									
0880	1" wide	1 Carp	200	.040	L.F.	4.99	1.83		6.82	8.35
0890	2" wide		150	.053	↓	9.10	2.45		11.55	13.75
0900	4" wide	↓	100	.080	↓	17.40	3.67		21.07	25

07 91 Preformed Joint Seals

07 91 13 – Compression Seals

07 91 13.10 Compression Seals

0010	COMPRESSION SEALS									
4900	O-ring type card, 1/4"	1 Bric	472	.017	L.F.	.48	.77		1.25	1.71
4910	1/2"		440	.018		1.79	.83		2.62	3.23
4920	3/4"		424	.019		3.62	.86		4.48	5.30
4930	1"		408	.020		6.95	.89		7.84	9
4940	1-1/4"		384	.021		13.75	.95		14.70	16.55
4950	1-1/2"		368	.022		17.40	.99		18.39	20.50
4960	1-3/4"		352	.023		36.50	1.04		37.54	41.50
4970	2"	↓	344	.023	↓	64.50	1.06		65.56	72

07 91 16 – Joint Gaskets

07 91 16.10 Joint Gaskets

0010	JOINT GASKETS									
4400	Joint gaskets, neaprene, closed cell w/adh, 1/8" x 3/8"	1 Bric	240	.033	L.F.	.28	1.52		1.80	2.63
4500	1/4" x 3/4"		215	.037	↓	.59	1.70		2.29	3.24
4700	1/2" x 1"		200	.040		1.30	1.82		3.12	4.21
4800	3/4" x 1-1/2"	↓	165	.048	↓	1.45	2.21		3.66	4.97

07 91 23 – Backer Rods

07 91 23.10 Backer Rods

0010	BACKER RODS									
0030	Backer rod, polyethylene, 1/4" diameter	1 Bric	4.60	1.739	C.L.F.	2.43	79.50		81.93	124
0050	1/2" diameter		4.60	1.739		3.66	79.50		83.16	125
0070	3/4" diameter		4.60	1.739		5.55	79.50		85.05	127
0090	1" diameter	↓	4.60	1.739	↓	8.80	79.50		88.30	131

07 91 26 – Joint Fillers

07 91 26.10 Joint Fillers

0010	JOINT FILLERS									
4360	Butyl rubber filler, 1/4" x 1/4"	1 Bric	290	.028	L.F.	.23	1.26		1.49	2.17
4365	1/2" x 1/2"		250	.032		.92	1.46		2.38	3.23
4370	1/2" x 3/4"		210	.038		1.38	1.74		3.12	4.17
4375	3/4" x 3/4"		230	.035		2.08	1.59		3.67	4.70
4380	1" x 1"	↓	180	.044	↓	2.77	2.03		4.80	6.15
4390	For coloring, add					12%				

07 91 Preformed Joint Seals

07 91 26 – Joint Fillers

07 91 26.10 Joint Fillers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4980	Polyethylene joint backing, 1/4" x 2"	1 Bric	2.08	3.846	C.L.F.	12	175		187	280
4990	1/4" x 6"		1.28	6.250	"	28	285		313	465
5600	Silicone, room temp vulcanizing foam seal, 1/4" x 1/2"		1312	.006	L.F.	.33	.28		.61	.79
5610	1/2" x 1/2"		656	.012		.67	.56		1.23	1.59
5620	1/2" x 3/4"		442	.018		1	.83		1.83	2.36
5630	3/4" x 3/4"		328	.024		1.50	1.11		2.61	3.35
5640	1/8" x 1"		1312	.006		.33	.28		.61	.79
5650	1/8" x 3"		442	.018		1	.83		1.83	2.36
5670	1/4" x 3"		295	.027		2.01	1.24		3.25	4.09
5680	1/4" x 6"		148	.054		4.01	2.46		6.47	8.15
5690	1/2" x 6"		82	.098		8	4.45		12.45	15.60
5700	1/2" x 9"		52.50	.152		12.05	6.95		19	24
5710	1/2" x 12"		33	.242		16.05	11.05		27.10	34.50

07 92 Joint Sealants

07 92 13 – Elastomeric Joint Sealants

07 92 13.20 Caulking and Sealant Options

0010 CAULKING AND SEALANT OPTIONS										
0050	Lotex acrylic based, bulk				Gal.	29.50			29.50	32.50
0055	Bulk in place 1/4" x 1/4" bead	1 Bric	300	.027	L.F.	.09	1.22		1.31	1.95
0060	1/4" x 3/8"		294	.027		.16	1.24		1.40	2.06
0065	1/4" x 1/2"		288	.028		.21	1.27		1.48	2.16
0075	3/8" x 3/8"		284	.028		.23	1.28		1.51	2.21
0080	3/8" x 1/2"		280	.029		.31	1.30		1.61	2.33
0085	3/8" x 5/8"		276	.029		.39	1.32		1.71	2.44
0095	3/8" x 3/4"		272	.029		.46	1.34		1.80	2.55
0100	1/2" x 1/2"		275	.029		.41	1.33		1.74	2.48
0105	1/2" x 5/8"		269	.030		.52	1.36		1.88	2.64
0110	1/2" x 3/4"		263	.030		.62	1.39		2.01	2.79
0115	1/2" x 7/8"		256	.031		.72	1.43		2.15	2.97
0120	1/2" x 1"		250	.032		.83	1.46		2.29	3.13
0125	3/4" x 3/4"		244	.033		.93	1.50		2.43	3.31
0130	3/4" x 1"		225	.036		1.24	1.62		2.86	3.84
0135	1" x 1"		200	.040		1.66	1.82		3.48	4.60
0190	Cartridges				Gol.	26.50			26.50	29
0200	11 fl. oz. cartridge				Ea.	2.28			2.28	2.51
0500	1/4" x 1/2"	1 Bric	288	.028	L.F.	.19	1.27		1.46	2.13
0600	1/2" x 1/2"		275	.029		.37	1.33		1.70	2.43
0800	3/4" x 3/4"		244	.033		.84	1.50		2.34	3.20
0900	3/4" x 1"		225	.036		1.12	1.62		2.74	3.70
1000	1" x 1"	▼	200	.040	▼	1.40	1.82		3.22	4.32
1400	Butyl-based, bulk				Gal.	34			34	37.50
1500	Cartridges				"	38.50			38.50	42.50
1700	1/4" x 1/2", 154 L.F./gol.	1 Bric	288	.028	L.F.	.22	1.27		1.49	2.17
1800	1/2" x 1/2", 77 L.F./gol.	"	275	.029	"	.44	1.33		1.77	2.51
2300	Polysulfide compounds, 1 component, bulk				Gol.	61			61	67
2600	1 or 2 component, in place, 1/4" x 1/4", 308 L.F./gol.	1 Bric	300	.027	L.F.	.20	1.22		1.42	2.07
2700	1/2" x 1/4", 154 L.F./gol.		288	.028		.40	1.27		1.67	2.37
2900	3/4" x 3/8", 68 L.F./gol.		272	.029		.90	1.34		2.24	3.03
3000	1" x 1/2", 38 L.F./gol.	▼	250	.032	▼	1.61	1.46		3.07	3.99
3200	Polyurethane, 1 or 2 component				Gol.	51			51	56

07 92 Joint Sealants

07 92 13 – Elastomeric Joint Sealants

07 92 13.20 Caulking and Sealant Options		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3500	Bulk, in place, 1/4" x 1/4"	1 Bric	300	.027	L.F.	.17	1.22		1.39	2.03
3655	1/2" x 1/4"		288	.028		.33	1.27		1.60	2.29
3800	3/4" x 3/8"		272	.029		.75	1.34		2.09	2.87
3900	1" x 1/2"		250	.032		1.33	1.46		2.79	3.68
4100	Silicone rubber, bulk				Gal.	45.50			45.50	50
4200	Cortridges				"	45			45	49.50

07 92 16 – Rigid Joint Sealants

07 92 16.10 Rigid Joint Sealants

0010	RIGID JOINT SEALANTS									
5800	Tapes, sealant, PVC foam adhesive, 1/16" x 1/4"				C.L.F.	6			6	6.60
5900	1/16" x 1/2"					8			8	8.80
5950	1/16" x 1"					15			15	16.50
6000	1/8" x 1/2"					9			9	9.90

07 92 19 – Acoustical Joint Sealants

07 92 19.10 Acoustical Sealant

0010	ACOUSTICAL SEALANT									
0020	Acoustical sealant, elastomeric, cartridges				Eq.	8.50			8.50	9.35
0025	In place, 1/4" x 1/4"	1 Bric	300	.027	L.F.	.35	1.22		1.57	2.23
0030	1/4" x 1/2"		288	.028		.69	1.27		1.96	2.69
0035	1/2" x 1/2"		275	.029		1.39	1.33		2.72	3.54
0040	1/2" x 3/4"		263	.030		2.08	1.39		3.47	4.40
0045	3/4" x 3/4"		244	.033		3.12	1.50		4.62	5.70
0050	1" x 1"		200	.040		5.55	1.82		7.37	8.90

07 95 Expansion Control

07 95 13 – Expansion Joint Cover Assemblies

07 95 13.50 Expansion Joint Assemblies

0010	EXPANSION JOINT ASSEMBLIES									
0200	Floor cover assemblies, 1" spoce, aluminum	1 Sswk	38	.211	L.F.	21.50	10.75		32.25	43
0300	Bronze		38	.211		51	10.75		61.75	75
0500	2" spoce, aluminum		38	.211		26.50	10.75		37.25	48
0600	Bronze		38	.211		55	10.75		65.75	79.50
0800	Wall and ceiling assemblies, 1" spoce, aluminum		38	.211		12.90	10.75		23.65	33
0900	Bronze		38	.211		48	10.75		58.75	71.50
1100	2" spoce, aluminum		38	.211		22	10.75		32.75	43
1200	Bronze		38	.211		59	10.75		69.75	83.50
1400	Floor to wall assemblies, 1" spoce, aluminum		38	.211		19.70	10.75		30.45	40.50
1500	Bronze or stainless		38	.211		58	10.75		68.75	82.50
1700	Gym floor angle covers, aluminum, 3" x 3" angle		46	.174		17.05	8.90		25.95	34.50
1800	3" x 4" angle		46	.174		23.50	8.90		32.40	41.50
2000	Roof closures, aluminum, flat roof, low profile, 1" spoce		57	.140		39.50	7.15		46.65	56
2100	High profile		57	.140		56.50	7.15		63.65	75
2300	Roof to wall, low profile, 1" spoce		57	.140		22	7.15		29.15	36.50
2400	High profile		57	.140		28.50	7.15		35.65	43.50

Estimating Tips

08 10 00 Doors and Frames

- All exterior doors should be addressed for their energy conservation (insulation and seals).
- Most metal doors and frames look alike, but there may be significant differences among them. When estimating these items, be sure to choose the line item that most closely compares to the specification or door schedule requirements regarding:
 - type of metal
 - metal gauge
 - door core material
 - fire rating
 - finish
 - Wood and plastic doors vary considerably in price. The primary determinant is the veneer material. Lauan, birch, and oak are the most common veneers. Other variables include the following:
 - hollow or solid core
 - fire rating
 - flush or raised panel
 - finish
 - Door pricing includes bore for cylindrical lockset and mortise for hinges.

08 30 00 Specialty Doors and Frames

- There are many varieties of special doors, and they are usually priced per each. Add frames, hardware, or operators required for a complete installation.

08 40 00 Entrances, Storefronts, and Curtain Walls

- Glazed curtain walls consist of the metal tube framing and the glazing material. The cost data in this subdivision is presented for the metal tube framing alone or the composite wall. If your estimate requires a detailed takeoff of the framing, be sure to add the glazing cost.

08 50 00 Windows

- Most metal windows are delivered preglazed. However, some metal windows are priced without glass. Refer to 08 80 00 Glazing for glass pricing. The grade C indicates commercial grade windows, usually ASTM C-35.
- All wood windows and vinyl are priced preglazed. The glazing is insulating glass. Some wood windows may have single pane float glass. Add the cost of screens and grills if required, and not already included.

08 70 00 Hardware

- Hardware costs add considerably to the cost of a door. The most efficient method to determine the hardware requirements for a project is to review the door and hardware schedule together.

- Door hinges are priced by the pair, with most doors requiring 1-1/2 pairs per door. The hinge prices do not include installation labor because it is included in door installation. Hinges are classified according to the frequency of use, base material, and finish.

08 80 00 Glazing

- Different openings require different types of glass. The most common types are:
 - float
 - tempered
 - insulating
 - impact-resistant
 - ballistic-resistant
- Most exterior windows are glazed with insulating glass. Entrance doors and window walls, where the glass is less than 18" from the floor, are generally glazed with tempered glass. Interior windows and some residential windows are glazed with float glass.
- Coastal communities require the use of impact-resistant glass, dependant on wind speed.
- The insulation or 'u' value is a strong consideration, along with solar heat gain, to determine total energy efficiency.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

08 05 Common Work Results for Openings

08 05 05 – Selective Windows and Doors Demolition

08 05 05.10 Selective Demolition Doors				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 SELECTIVE DEMOLITION DOORS									Labor	Equipment		
0200	Doors, exterior, 1-3/4" thick, single, 3' x 7' high	R024119-10		1 Clob	16	.500	Eo.		18.35		18.35	28.50
0220	Double, 6' x 7' high				12	.667			24.50		24.50	37.50
0500	Interior, 1-3/8" thick, single, 3' x 7' high				20	.400			14.65		14.65	22.50
0520	Double, 6' x 7' high				16	.500			18.35		18.35	28.50
0700	Bi-folding, 3' x 6'-8" high				20	.400			14.65		14.65	22.50
0720	6' x 6'-8" high				18	.444			16.30		16.30	25
0900	Bi-passing, 3' x 6'-8" high				16	.500			18.35		18.35	28.50
0940	6' x 6'-8" high				14	.571			21		21	32.50
1500	Remove ond reset, minimum			1 Corp	8	1			46		46	71
1520	Maximum				6	1.333			61		61	94.50
2000	Frames, including trim, metal				8	1			46		46	71
2200	Wood			2 Corp	32	.500			23		23	35.50
3000	Special doors, counter doors				6	2.667			122		122	189
3100	Double octing				10	1.600			73.50		73.50	113
3200	Floor door (trop type), or access type				8	2			91.50		91.50	142
3300	Gloss, sliding, including frames				12	1.333			61		61	94.50
3400	Overhead, commercial, 12' x 12' high				4	4			183		183	283
3440	up to 20' x 16' high				3	5.333			245		245	375
3445	up to 35' x 30' high				1	16			735		735	1,125
3500	Residential, 9' x 7' high				8	2			91.50		91.50	142
3540	16' x 7' high				7	2.286			105		105	162
3620	Maximum				2.50	6.400			293		293	455
3700	Roll-up grille				5	3.200			147		147	226
3800	Revolving door				2	8			365		365	565
3900	Storefront swing door				3	5.333			245		245	375
6600	Demo flexible transporent strip entrance			3 Shee	115	.209	SF Surf		11.40		11.40	17.45
7100	Remove double swing pneumatic doors, openers ond sensors			2 Skwk	.50	32	Opng.		1,525		1,525	2,350
7110	Remove automotic operators, industrial, sliding doors, to 12' wide			"	.40	40	"		1,900		1,900	2,925
7550	Hongor door demo			2 Sswk	330	.048	S.F.		2.48		2.48	4.37
7570	Remove shock absorbing door			"	1.90	8.421	Opng.		430		430	760
08 05 05.20 Selective Demolition of Windows												
0010 SELECTIVE DEMOLITION OF WINDOWS												
0200	Aluminum, including trim, to 12 S.F.	R024119-10		1 Clob	16	.500	Eo.		18.35		18.35	28.50
0240	To 25 S.F.				11	.727			26.50		26.50	41
0280	To 50 S.F.				5	1.600			58.50		58.50	90.50
0320	Storm windows/screens, to 12 S.F.				27	.296			10.85		10.85	16.75
0360	To 25 S.F.				21	.381			13.95		13.95	21.50
0400	To 50 S.F.				16	.500			18.35		18.35	28.50
0600	Gloss, minimum				200	.040	S.F.		1.47		1.47	2.26
0620	Maximum				150	.053	"		1.95		1.95	3.02
1000	Steel, including trim, to 12 S.F.				13	.615	Eo.		22.50		22.50	35
1020	To 25 S.F.				9	.889			32.50		32.50	50.50
1040	To 50 S.F.				4	2			73.50		73.50	113
2000	Wood, including trim, to 12 S.F.				22	.364			13.35		13.35	20.50
2020	To 25 S.F.				18	.444			16.30		16.30	25
2060	To 50 S.F.				13	.615			22.50		22.50	35
2065	To 180 S.F.				8	1			36.50		36.50	56.50
4300	Remove boy/bow window			2 Corp	6	2.667			122		122	189
4410	Remove skylight, plstc domes, flush/curb mtd			G-3	395	.081	S.F.		3.70		3.70	5.65
5020	Remove ond reset window, minimum			1 Corp	6	1.333	Eo.		61		61	94.50
5040	Average				4	2			91.50		91.50	142

08 05 Common Work Results for Openings

08 05 05 – Selective Windows and Doors Demolition

08 05 05.20 Selective Demolition of Windows		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5080	Maximum	1 Corp	2	4	Eo.		183		183	283

08 11 Metal Doors and Frames

08 11 16 – Aluminum Doors and Frames

08 11 16.10 Entrance Doors

0010	ENTRANCE DOORS and frame, Aluminum, narrow stile									
0011	Including standard hardware, clear finish, no gloss									
0012	Top and bottom offset pivots, 1/4" beveled glass stops, threshold									
0013	Dead bolt lock with inside thumb screw, standard push pull									
0020	3'-0" x 7'-0" opening	2 Sswk	2	8	Eo.	885	410		1,295	1,700
0025	Anodizing aluminum entr. door & frame, odd					98.50			98.50	109
0030	3'-6" x 7'-0" opening	2 Sswk	2	8		810	410		1,220	1,600
0100	3'-0" x 10'-0" opening, 3' high transom		1.80	8.889		1,275	455		1,730	2,225
0200	3'-6" x 10'-0" opening, 3' high transom		1.80	8.889		1,350	455		1,805	2,275
0280	5'-0" x 7'-0" opening		2	8		1,425	410		1,835	2,300
0300	6'-0" x 7'-0" opening		1.30	12.308		1,200	630		1,830	2,425
0301	6'-0" x 7'-0" opening		1.30	12.308	Pr.	1,200	630		1,830	2,425
0400	6'-0" x 10'-0" opening, 3' high transom		1.10	14.545		1,625	745		2,370	3,075
0420	7'-0" x 7'-0" opening		1	16		1,350	820		2,170	2,950
0520	3'-0" x 7'-0" opening, wide stile		2	8	Eo.	1,000	410		1,410	1,825
0540	3'-6" x 7'-0" opening		2	8		1,200	410		1,610	2,050
0560	5'-0" x 7'-0" opening		2	8		1,525	410		1,935	2,400
0580	6'-0" x 7'-0" opening		1.30	12.308	Pr.	1,575	630		2,205	2,850
0600	7'-0" x 7'-0" opening		1	16	"	1,725	820		2,545	3,325
1200	For non-standard size, odd				Leaf	80%				
1250	For installation of non-standard size, odd						20%			
1300	Light bronze finish, odd				Leaf	36%				
1400	Dark bronze finish, odd					25%				
1500	For black finish, odd					40%				
1600	Concealed panic device, odd					940			940	1,025
1700	Electric striker release, odd				Opng.	260			260	286
1800	Floor check, odd				Leaf	650			650	710
1900	Concealed closer, odd				"	520			520	570

08 11 63 – Metal Screen and Storm Doors and Frames

08 11 63.23 Aluminum Screen and Storm Doors and Frames

0010	ALUMINUM SCREEN AND STORM DOORS AND FRAMES									
0020	Combination storm and screen									
0420	Clear anodic coating, 2'-8" wide	2 Corp	14	1.143	Eo.	165	52.50		217.50	263
0440	3'-0" wide	"	14	1.143	"	163	52.50		215.50	260
0500	For 7' door height, odd					8%				
1020	Mill finish, 2'-8" wide	2 Corp	14	1.143	Eo.	235	52.50		287.50	340
1040	3'-0" wide	"	14	1.143		258	52.50		310.50	365
1100	For 7'-0" door, odd					8%				
1520	White painted, 2'-8" wide	2 Corp	14	1.143		286	52.50		338.50	395
1540	3'-0" wide	"	14	1.143		305	52.50		357.50	415
1600	For 7'-0" door, odd					8%				
2000	Wood door & screen, see Section 08 14 33.20									

08 11 Metal Doors and Frames

08 11 74 – Sliding Metal Grilles

08 11 74.10 Rolling Grille Supports

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	ROLLING GRILLE SUPPORTS									
0020	Rolling grille supports, overhead framed	E-4	36	.889	L.F.	30	46	3.95	79.95	118

08 12 Metal Frames

08 12 13 – Hollow Metal Frames

08 12 13.13 Standard Hollow Metal Frames

0010	STANDARD HOLLOW METAL FRAMES									
0020	16 ga., up to 5-3/4" jamb depth									
0025	3'-0" x 6'-8" single		2 Corp	16	1	Eo.	145	46	191	231
0028	3'-6" wide, single			16	1		152	46	198	238
0030	4'-0" wide, single			16	1		151	46	197	237
0040	6'-0" wide, double			14	1.143		204	52.50	256.50	305
0045	8'-0" wide, double			14	1.143		213	52.50	265.50	315
0100	3'-0" x 7'-0" single			16	1		150	46	196	236
0110	3'-6" wide, single			16	1		157	46	203	244
0112	4'-0" wide, single			16	1		157	46	203	244
0140	6'-0" wide, double			14	1.143		194	52.50	246.50	295
0145	8'-0" wide, double			14	1.143		229	52.50	281.50	335
1000	16 ga., up to 4-7/8" deep, 3'-0" x 7'-0" single			16	1		166	46	212	254
1140	6'-0" wide, double			14	1.143		188	52.50	240.50	288
1200	16 ga., 8-3/4" deep, 3'-0" x 7'-0" single			16	1		199	46	245	290
1240	6'-0" wide, double			14	1.143		234	52.50	286.50	340
2800	14 ga., up to 3-7/8" deep, 3'-0" x 7'-0" single			16	1		181	46	227	270
2840	6'-0" wide, double			14	1.143		217	52.50	269.50	320
3000	14 ga., up to 5-3/4" deep, 3'-0" x 6'-8" single			16	1		155	46	201	242
3002	3'-6" wide, single			16	1		196	46	242	286
3005	4'-0" wide, single			16	1		196	46	242	286
3600	up to 5-3/4" jamb depth, 4'-0" x 7'-0" single			15	1.067		185	49	234	279
3620	6'-0" wide, double			12	1.333		235	61	296	355
3640	8'-0" wide, double			12	1.333		246	61	307	365
3700	8'-0" high, 4'-0" wide, single			15	1.067		235	49	284	335
3740	8'-0" wide, double			12	1.333		290	61	351	415
4000	6-3/4" deep, 4'-0" x 7'-0" single			15	1.067		220	49	269	320
4020	6'-0" wide, double			12	1.333		275	61	336	395
4040	8'-0", wide double			12	1.333		282	61	343	405
4100	8'-0" high, 4'-0" wide, single			15	1.067		276	49	325	380
4140	8'-0" wide, double			12	1.333		320	61	381	450
4400	8-3/4" deep, 4'-0" x 7'-0", single			15	1.067		252	49	301	355
4440	8'-0" wide, double			12	1.333		315	61	376	440
4500	4'-0" x 8'-0", single			15	1.067		283	49	332	385
4540	8'-0" wide, double			12	1.333		350	61	411	480
4900	For welded frames, odd						63		63	69.50
5400	14 ga., "B" label, up to 5-3/4" deep, 4'-0" x 7'-0" single		2 Corp	15	1.067		208	49	257	305
5440	8'-0" wide, double			12	1.333		271	61	332	395
5800	6-3/4" deep, 7'-0" high, 4'-0" wide, single			15	1.067		218	49	267	315
5840	8'-0" wide, double			12	1.333		385	61	446	520
6200	8-3/4" deep, 4'-0" x 7'-0" single			15	1.067		289	49	338	395
6240	8'-0" wide, double			12	1.333		365	61	426	495
6300	For "A" label use same price as "B" label									
6400	For baked enamel finish, odd						30%	15%		

08 12 Metal Frames

08 12 13 – Hollow Metal Frames

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
08 12 13.13	Standard Hollow Metal Frames						Labor	Equipment		
6500	For galvanizing, odd					20%				
6600	For hospital stop, odd				Eo.	295			295	325
6620	For hospital stop, stainless steel odd				"	380			380	420
7900	Transom lite frames, fixed, odd	2 Corp	155	.103	S.F.	54	4.73		58.73	67
8000	Movable, odd	"	130	.123	"	68	5.65		73.65	83.50

08 12 13.25 Channel Metal Frames

0010	CHANNEL METAL FRAMES									
0020	Steel channels with anchors and bar stops									
0100	6" channel @ 8.2#/L.F., 3' x 7' door, weighs 150#		E-4	13	2.462	Eo.	239	127	10.95	376.95 500
0200	8" channel @ 11.5#/L.F., 6' x 8' door, weighs 275#			9	3.556		435	183	15.80	633.80 820
0300	8' x 12' door, weighs 400#			6.50	4.923		635	254	22	911 1,175
0400	10" channel @ 15.3#/L.F., 10' x 10' door, weighs 500#			6	5.333		795	275	23.50	1,093.50 1,375
0500	12' x 12' door, weighs 600#			5.50	5.818		955	300	26	1,281 1,600
0600	12" channel @ 20.7#/L.F., 12' x 12' door, weighs 825#			4.50	7.111		1,300	365	31.50	1,696.50 2,125
0700	12' x 16' door, weighs 1000#			4	8		1,600	415	35.50	2,050.50 2,525
0800	For frames without bar stops, light sections, deduct					15%				
0900	Heavy sections, deduct					10%				

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.13 Standard Hollow Metal Doors

0010	STANDARD HOLLOW METAL DOORS									
0015	Flush, full panel, hollow core									
0017	When noted doors are prepared but do not include glass or louvers									
0020	1-3/8" thick, 20 go., 2'-0" x 6'-8"		2 Corp	20	.800	Eo.	335	36.50		371.50 425
0040	2'-8" x 6'-8"			18	.889		350	41		391 450
0060	3'-0" x 6'-8"			17	.941		350	43		393 450
0100	3'-0" x 7'-0"			17	.941		360	43		403 460
0120	For vision lite, odd						94.50			94.50 104
0140	For narrow lite, odd						102			102 112
0320	Half gloss, 20 go., 2'-0" x 6'-8"		2 Corp	20	.800		490	36.50		526.50 595
0340	2'-8" x 6'-8"			18	.889		515	41		556 630
0360	3'-0" x 6'-8"			17	.941		510	43		553 625
0400	3'-0" x 7'-0"			17	.941		625	43		668 750
0410	1-3/8" thick, 18 go., 2'-0" x 6'-8"			20	.800		400	36.50		436.50 495
0420	3'-0" x 6'-8"			17	.941		405	43		448 510
0425	3'-0" x 7'-0"			17	.941		415	43		458 525
0450	For vision lite, odd						94.50			94.50 104
0452	For narrow lite, odd						102			102 112
0460	Half gloss, 18 go., 2'-0" x 6'-8"		2 Corp	20	.800		555	36.50		591.50 670
0465	2'-8" x 6'-8"			18	.889		575	41		616 700
0470	3'-0" x 6'-8"			17	.941		565	43		608 685
0475	3'-0" x 7'-0"			17	.941		565	43		608 690
0500	Hollow core, 1-3/4" thick, full panel, 20 go., 2'-8" x 6'-8"			18	.889		420	41		461 525
0520	3'-0" x 6'-8"			17	.941		420	43		463 525
0640	3'-0" x 7'-0"			17	.941		435	43		478 545
0680	4'-0" x 7'-0"			15	1.067		630	49		679 770
0700	4'-0" x 8'-0"			13	1.231		735	56.50		791.50 895
1000	18 go., 2'-8" x 6'-8"			17	.941		490	43		533 605
1020	3'-0" x 6'-8"			16	1		475	46		521 595
1120	3'-0" x 7'-0"			17	.941		515	43		558 630

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.13 Standard Hollow Metal Doors

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor Equipment	Total	Total Incl O&P
1180	4'-0" x 7'-0"		2 Carp	14	1.143	Ea.	630	52.50	682.50	775
1200	4'-0" x 8'-0"		▼	17	.941		735	43	778	875
1212	Far vision lite, add						94.50		94.50	104
1214	Far narrow lite, add						102		102	112
1230	Half glass, 20 ga., 2'-8" x 6'-8"		2 Carp	20	.800		575	36.50	611.50	690
1240	3'-0" x 6'-8"			18	.889		575	41	616	700
1260	3'-0" x 7'-0"			18	.889		595	41	636	715
1280	Embossed panel, 1-3/4" thick, paly care, 20 ga., 3'-0" x 7'-0"			18	.889		415	41	456	520
1290	Half glass, 1-3/4" thick, paly care, 20 ga., 3'-0" x 7'-0"			18	.889		610	41	651	735
1320	18 ga., 2'-8" x 6'-8"			18	.889		640	41	681	770
1340	3'-0" x 6'-8"			17	.941		635	43	678	760
1360	3'-0" x 7'-0"			17	.941		645	43	688	775
1380	4'-0" x 7'-0"			15	1.067		785	49	834	940
1400	4'-0" x 8'-0"			14	1.143		890	52.50	942.50	1,050
1500	Flush full panel, 16 ga., steel hollow core									
1520	2'-0" x 6'-8"		2 Carp	20	.800	Ea.	555	36.50	591.50	665
1530	2'-8" x 6'-8"			20	.800		555	36.50	591.50	670
1540	3'-0" x 6'-8"			20	.800		550	36.50	586.50	660
1560	2'-8" x 7'-0"			18	.889		575	41	616	695
1570	3'-0" x 7'-0"			18	.889		560	41	601	680
1580	3'-6" x 7'-0"			18	.889		655	41	696	785
1590	4'-0" x 7'-0"			18	.889		725	41	766	860
1600	2'-8" x 8'-0"			18	.889		700	41	741	835
1620	3'-0" x 8'-0"			18	.889		720	41	761	855
1630	3'-6" x 8'-0"			18	.889		800	41	841	945
1640	4'-0" x 8'-0"			18	.889		850	41	891	995
1720	Insulated, 1-3/4" thick, full panel, 18 ga., 3'-0" x 6'-8"			15	1.067		475	49	524	600
1740	2'-8" x 7'-0"			16	1		505	46	551	625
1760	3'-0" x 7'-0"			15	1.067		490	49	539	615
1800	4'-0" x 8'-0"			13	1.231		740	56.50	796.50	895
1820	Half glass, 18 ga., 3'-0" x 6'-8"			16	1		635	46	681	765
1840	2'-8" x 7'-0"			17	.941		660	43	703	790
1860	3'-0" x 7'-0"			16	1		685	46	731	825
1900	4'-0" x 8'-0"		▼	14	1.143		670	52.50	722.50	815
2000	Far vision lite, add						94.50		94.50	104
2010	Far narrow lite, add						102		102	112
8100	Far battam louver, add						281		281	310
8110	Far baked enamel finish, add						30%	15%		
8120	Far galvanizing, add						20%			

08 13 13.15 Metal Fire Doors

0010	METAL FIRE DOORS									
0015	Steel, flush, "B" label, 90 minute									
0020	Full panel, 20 ga., 2'-0" x 6'-8"		2 Carp	20	.800	Ea.	420	36.50	456.50	515
0040	2'-8" x 6'-8"			18	.889		435	41	476	545
0060	3'-0" x 6'-8"			17	.941		435	43	478	545
0080	3'-0" x 7'-0"			17	.941		455	43	498	565
0140	18 ga., 3'-0" x 6'-8"			16	1		495	46	541	615
0160	2'-8" x 7'-0"			17	.941		520	43	563	635
0180	3'-0" x 7'-0"			16	1		505	46	551	625
0200	4'-0" x 7'-0"			15	1.067		650	49	699	790
0220	Far "A" label, 3 hour, 18 ga., use same price as "B" label									
0240	Far vision lite, add					Ea.	156		156	172

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.15 Metal Fire Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0300	Full panel, 16 ga., 2'-0" x 6'-8"	2 Carp	20	.800	Ea.	545	36.50		581.50	655
0310	2'-8" x 6'-8"		18	.889		545	41		586	665
0320	3'-0" x 6'-8"		17	.941		540	43		583	660
0350	2'-8" x 7'-0"		17	.941		565	43		608	685
0360	3'-0" x 7'-0"		16	1		545	46		591	670
0370	4'-0" x 7'-0"		15	1.067		705	49		754	855
0520	Flush, "B" label 90 min., egress care, 20 ga., 2'-0" x 6'-8"		18	.889		655	41		696	785
0540	2'-8" x 6'-8"		17	.941		665	43		708	795
0560	3'-0" x 6'-8"		16	1		665	46		711	800
0580	3'-0" x 7'-0"		16	1		685	46		731	820
0640	Flush, "A" label 3 hour, egress care, 18 ga., 3'-0" x 6'-8"		15	1.067		720	49		769	870
0660	2'-8" x 7'-0"		16	1		750	46		796	890
0680	3'-0" x 7'-0"		15	1.067		740	49		789	890
0700	4'-0" x 7'-0"		14	1.143		885	52.50		937.50	1,050

08 13 13.20 Residential Steel Doors

0010 RESIDENTIAL STEEL DOORS										
0020	Prehung, insulated, exterior									
0030	Embossed, full panel, 2'-8" x 6'-8"	G	2 Carp	17	.941	Ea.	305	43	348	400
0040	3'-0" x 6'-8"	G		15	1.067		247	49	296	345
0060	3'-0" x 7'-0"	G		15	1.067		330	49	379	440
0070	5'-4" x 6'-8", double	G		8	2		625	91.50	716.50	825
0220	Half glass, 2'-8" x 6'-8"	G		17	.941		320	43	363	415
0240	3'-0" x 6'-8"	G		16	1		320	46	366	420
0260	3'-0" x 7'-0"	G		16	1		370	46	416	475
0270	5'-4" x 6'-8", double	G		8	2		650	91.50	741.50	855
1320	Flush face, full panel, 2'-8" x 6'-8"	G		16	1		264	46	310	360
1340	3'-0" x 6'-8"	G		15	1.067		264	49	313	365
1360	3'-0" x 7'-0"	G		15	1.067		296	49	345	400
1380	5'-4" x 6'-8", double	G		8	2		560	91.50	651.50	755
1420	Half glass, 2'-8" x 6'-8"	G		17	.941		325	43	368	420
1440	3'-0" x 6'-8"	G		16	1		325	46	371	425
1460	3'-0" x 7'-0"	G		16	1		360	46	406	465
1480	5'-4" x 6'-8", double	G		8	2		640	91.50	731.50	845
1500	Sidelight, full lite, 1'-0" x 6'-8" with grille	G					252		252	277
1510	1'-0" x 6'-8", low e	G					268		268	295
1520	1'-0" x 6'-8", half lite	G					280		280	310
1530	1'-0" x 6'-8", half lite, low e	G					284		284	310
2300	Interior, residential, closet, bi-fold, 2'-0" x 6'-8"	G	2 Carp	16	1		161	46	207	248
2330	3'-0" wide	G		16	1		200	46	246	291
2360	4'-0" wide	G		15	1.067		260	49	309	360
2400	5'-0" wide	G		14	1.143		315	52.50	367.50	430
2420	6'-0" wide	G		13	1.231		335	56.50	391.50	455

08 13 13.25 Doors Hollow Metal

0010 DOORS HOLLOW METAL										
0500	Exterior, commercial, flush, 20 ga., 1-3/4" x 7'-0" x 2'-6" wide	G	2 Carp	15	1.067	Ea.	395	49	444	505
0530	2'-8" wide	G		15	1.067		435	49	484	550
0560	3'-0" wide	G		14	1.143		435	52.50	487.50	555
1000	18 ga., 1-3/4" x 7'-0" x 2'-6" wide	G		15	1.067		495	49	544	620
1030	2'-8" wide	G		15	1.067		500	49	549	625
1060	3'-0" wide	G		14	1.143		485	52.50	537.50	615
1500	16 ga., 1-3/4 x 7'-0" x 2'-6" wide	G		15	1.067		560	49	609	690
1530	2'-8" wide	G		15	1.067		565	49	614	700

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.25 Doors Hollow Metal

			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
1560	3'-0" wide	G	2 Carp	14	1.143	Ea.	555	52.50		607.50	690
1590	3'-6" wide	G		14	1.143		645	52.50		697.50	790
2900	Fire door, "A" label, 18 gougé, 1-3/4" x 2'-6" x 7'-0"	G		15	1.067		645	49		694	785
2930	2'-8" wide	G		15	1.067		665	49		714	805
2960	3'-0" wide	G		14	1.143		640	52.50		692.50	785
2990	3'-6" wide	G		14	1.143		735	52.50		787.50	885
3100	"B" label, 2'-6" wide	G		15	1.067		585	49		634	720
3130	2'-8" wide	G		15	1.067		590	49		639	725
3160	3'-0" wide	G		14	1.143		580	52.50		632.50	720

08 13 16 – Aluminum Doors

08 13 16.10 Commercial Aluminum Doors

0010	COMMERCIAL ALUMINUM DOORS, flush, no glazing										
5000	Flush panel doors, pair of 2'-6" x 7'-0"		2 Sswk	2	8	Pr.	1,425	410		1,835	2,300
5050	3'-0" x 7'-0", single			2.50	6.400	Ea.	805	325		1,130	1,450
5100	Pair of 3'-0" x 7'-0"			2	8	Pr.	1,525	410		1,935	2,400
5150	3'-6" x 7'-0", single		▼	2.50	6.400	Ea.	965	325		1,290	1,625

08 13 73 – Sliding Metal Doors

08 13 73.10 Steel Sliding Doors

0010	STEEL SLIDING DOORS										
0020	Up to 50' x 18', electric, standard duty, minimum		L-5	360	.156	S.F.	29.50	7.95	2.07	39.52	48.50
0100	Maximum			340	.165		46	8.45	2.19	56.64	67.50
0500	Heavy duty, minimum			297	.189		37.50	9.65	2.51	49.66	60.50
0600	Maximum		▼	277	.202	▼	93.50	10.35	2.69	106.54	124

08 14 Wood Doors

08 14 13 – Carved Wood Doors

08 14 13.10 Types of Wood Doors, Carved

0010	TYPES OF WOOD DOORS, CARVED										
3000	Solid wood, 1-3/4" thick stile and rail										
3020	Mohogany, 3'-0" x 7'-0", minimum		2 Carp	14	1.143	Ea.	1,075	52.50		1,127.50	1,250
3030	Maximum			10	1.600		1,800	73.50		1,873.50	2,100
3040	3'-6" x 8'-0", minimum			10	1.600		1,500	73.50		1,573.50	1,775
3050	Maximum			8	2		2,500	91.50		2,591.50	2,900
3100	Pine, 3'-0" x 7'-0", minimum			14	1.143		490	52.50		542.50	615
3110	Maximum			10	1.600		825	73.50		898.50	1,025
3120	3'-6" x 8'-0", minimum			10	1.600		900	73.50		973.50	1,100
3130	Maximum			8	2		1,825	91.50		1,916.50	2,175
3200	Red oak, 3'-0" x 7'-0", minimum			14	1.143		1,725	52.50		1,777.50	1,975
3210	Maximum			10	1.600		2,300	73.50		2,373.50	2,650
3220	3'-6" x 8'-0", minimum			10	1.600		2,600	73.50		2,673.50	2,975
3230	Maximum		▼	8	2	▼	3,300	91.50		3,391.50	3,775
4000	Hand carved door, mahogany										
4020	3'-0" x 7'-0", minimum		2 Carp	14	1.143	Ea.	1,750	52.50		1,802.50	2,000
4030	Maximum			11	1.455		3,700	66.50		3,766.50	4,175
4040	3'-6" x 8'-0", minimum			10	1.600		3,000	73.50		3,073.50	3,425
4050	Maximum			8	2		3,700	91.50		3,791.50	4,225
4200	Rose wood, 3'-0" x 7'-0", minimum			14	1.143		5,200	52.50		5,252.50	5,800
4210	Maximum			11	1.455		13,700	66.50		13,766.50	15,200
4220	3'-6" x 8'-0", minimum			10	1.600		5,900	73.50		5,973.50	6,625
4225	Maximum		▼	10	1.600	▼	8,900	73.50		8,973.50	9,925

08 14 Wood Doors

08 14 13 – Carved Wood Doors

08 14 13.10 Types of Wood Doors, Carved		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
					Eo.		Labor	Equipment		
4400	For custom finish, add					475			475	525
4600	Side light, mahogany, 7'-0" x 1'-6" wide, minimum	2 Corp	18	.889		1,100	41		1,141	1,275
4610	Maximum		14	1.143		2,625	52.50		2,677.50	2,975
4620	8'-0" x 1'-6" wide, minimum		14	1.143		1,800	52.50		1,852.50	2,050
4630	Maximum		10	1.600		2,100	73.50		2,173.50	2,425
4640	Side light, oak, 7'-0" x 1'-6" wide, minimum		18	.889		1,200	41		1,241	1,400
4650	Maximum		14	1.143		2,100	52.50		2,152.50	2,375
4660	8'-0" x 1'-6" wide, minimum		14	1.143		1,100	52.50		1,152.50	1,275
4670	Maximum	▼	10	1.600	▼	2,100	73.50		2,173.50	2,425

08 14 16 – Flush Wood Doors

08 14 16.09 Smooth Wood Doors

0010	SMOOTH WOOD DOORS									
0015	Flush, interior, hollow core									
0025	Lauan face, 1-3/8", 3'-0" x 6'-8"	2 Corp	17	.941	Eo.	54.50	43		97.50	127
0030	4'-0" x 6'-8"		16	1		126	46		172	210
0080	1-3/4", 2'-0" x 6'-8"		17	.941		39	43		82	109
0108	3'-0" x 7'-0"		16	1	▼	123	46		169	206
0112	Pair of 3'-0" x 7'-0"		9	1.778	Pr.	104	81.50		185.50	240
0140	Birch face, 1-3/8", 2'-6" x 6'-8"		17	.941	Eo.	85	43		128	160
0180	3'-0" x 6'-8"		17	.941		95.50	43		138.50	172
0200	4'-0" x 6'-8"		16	1		158	46		204	245
0202	1-3/4", 2'-0" x 6'-8"		17	.941		50.50	43		93.50	122
0210	3'-0" x 7'-0"		16	1		109	46		155	191
0214	Pair of 3'-0" x 7'-0"		9	1.778	Pr.	211	81.50		292.50	360
0220	Oak face, 1-3/8", 2'-0" x 6'-8"		17	.941	Eo.	104	43		147	181
0280	3'-0" x 6'-8"		17	.941		115	43		158	194
0300	4'-0" x 6'-8"		16	1		139	46		185	224
0305	1-3/4", 2'-6" x 6'-8"		17	.941		110	43		153	188
0310	3'-0" x 7'-0"		16	1		211	46		257	305
0320	Walnut face, 1-3/8", 2'-0" x 6'-8"		17	.941		182	43		225	268
0340	2'-6" x 6'-8"		17	.941		189	43		232	275
0380	3'-0" x 6'-8"		17	.941		197	43		240	283
0400	4'-0" x 6'-8"	▼	16	1		216	46		262	310
0430	For 7'-0" high, add					26			26	28.50
0440	For 8'-0" high, add					36			36	39.50
0480	For prefinishing, clear, add					42			42	46
0500	For prefinishing, stain, add					52			52	57
1320	M.D. overlay on hardboard, 1-3/8", 2'-0" x 6'-8"	2 Corp	17	.941		115	43		158	194
1340	2'-6" x 6'-8"		17	.941		115	43		158	194
1380	3'-0" x 6'-8"		17	.941		126	43		169	206
1400	4'-0" x 6'-8"	▼	16	1		178	46		224	267
1420	For 7'-0" high, add					15.75			15.75	17.35
1440	For 8'-0" high, add					31.50			31.50	34.50
1720	H.P. plastic laminated, 1-3/8", 2'-0" x 6'-8"	2 Corp	16	1		260	46		306	355
1740	2'-6" x 6'-8"		16	1		260	46		306	355
1780	3'-0" x 6'-8"		15	1.067		290	49		339	395
1800	4'-0" x 6'-8"	▼	14	1.143		385	52.50		437.50	500
1820	For 7'-0" high, add					15.75			15.75	17.35
1840	For 8'-0" high, add					31.50			31.50	34.50
2020	Particle core, lauan face, 1-3/8", 2'-6" x 6'-8"	2 Corp	15	1.067		92	49		141	177
2040	3'-0" x 6'-8"		14	1.143		94	52.50		146.50	184
2080	3'-0" x 7'-0"	▼	13	1.231		98.50	56.50		155	195

08 14 Wood Doors

08 14 16 – Flush Wood Doors

08 14 16.09 Smooth Wood Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2085	4'-0" x 7'-0"	2 Corp	12	1.333	Ea.	123	61		184	230
2110	1-3/4", 3'-0" x 7'-0"		13	1.231		123	56.50		179.50	222
2120	Birch face, 1-3/8", 2'-6" x 6'-8"		15	1.067		103	49		152	189
2140	3'-0" x 6'-8"		14	1.143		113	52.50		165.50	205
2180	3'-0" x 7'-0"		13	1.231		123	56.50		179.50	222
2200	4'-0" x 7'-0"		12	1.333		139	61		200	248
2205	1-3/4", 3'-0" x 7'-0"		13	1.231		123	56.50		179.50	222
2220	Oak face, 1-3/8", 2'-6" x 6'-8"		15	1.067		116	49		165	204
2240	3'-0" x 6'-8"		14	1.143		128	52.50		180.50	222
2280	3'-0" x 7'-0"		13	1.231		133	56.50		189.50	233
2300	4'-0" x 7'-0"		12	1.333		156	61		217	267
2305	1-3/4" 3'-0" x 7'-0"		13	1.231		190	56.50		246.50	296
2320	Walnut face, 1-3/8", 2'-0" x 6'-8"		15	1.067		123	49		172	211
2340	2'-6" x 6'-8"		14	1.143		139	52.50		191.50	234
2380	3'-0" x 6'-8"		13	1.231		156	56.50		212.50	259
2400	4'-0" x 6'-8"		12	1.333		206	61		267	320
2440	For 8'-0" high, add					41			41	45
2460	For 8'-0" high walnut, add					36			36	39.50
2480	For solid wood core, add					40			40	44
2720	For prefinishing, clear, add					36			36	39.50
2740	For prefinishing, stain, add					53			53	58.50
3320	M.D. overlay on hardboard, 1-3/8", 2'-6" x 6'-8"	2 Corp	14	1.143		106	52.50		158.50	198
3340	3'-0" x 6'-8"		13	1.231		115	56.50		171.50	214
3380	3'-0" x 7'-0"		12	1.333		117	61		178	224
3400	4'-0" x 7'-0"		10	1.600		155	73.50		228.50	284
3440	For 8'-0" height, add					37			37	40.50
3460	For solid wood core, add					42			42	46
3720	H.P. plastic laminate, 1-3/8", 2'-6" x 6'-8"	2 Corp	13	1.231		160	56.50		216.50	263
3740	3'-0" x 6'-8"		12	1.333		185	61		246	299
3780	3'-0" x 7'-0"		11	1.455		190	66.50		256.50	310
3800	4'-0" x 7'-0"		8	2		225	91.50		316.50	390
3840	For 8'-0" height, add					37			37	40.50
3860	For solid wood core, add					42			42	46
4000	Exterior, flush, solid core, birch, 1-3/4" x 2'-6" x 7'-0"	2 Corp	15	1.067		173	49		222	266
4020	2'-8" wide		15	1.067		159	49		208	251
4040	3'-0" wide		14	1.143		209	52.50		261.50	310
4100	Oak faced 1-3/4" x 2'-6" x 7'-0"		15	1.067		215	49		264	315
4120	2'-8" wide		15	1.067		225	49		274	325
4140	3'-0" wide		14	1.143		230	52.50		282.50	335
4200	Walnut faced, 1-3/4" x 2'-6" x 7'-0"		15	1.067		310	49		359	415
4220	2'-8" wide		15	1.067		315	49		364	420
4240	3'-0" wide		14	1.143		320	52.50		372.50	430
4300	For 6'-8" high door, deduct from 7'-0" door					16.80			16.80	18.50
5000	Wood doors, for vision lite, add					94.50			94.50	104
5010	Wood doors, for narrow lite, add					102			102	112
5015	Wood doors, for bottom (or top) louver, add					281			281	310

08 14 16.20 Wood Fire Doors

WOOD FIRE DOORS		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010	Particle core, 7 face plys, "B" label,									
0020	1 hour, birch face, 1-3/4" x 2'-6" x 6'-8"	2 Corp	14	1.143	Ea.	420	52.50		472.50	540
0040	3'-0" x 6'-8"		13	1.231		400	56.50		456.50	525
0080	3'-0" x 7'-0"		12	1.333		435	61		496	575

08 14 Wood Doors

08 14 16 – Flush Wood Doors

08 14 16.20 Wood Fire Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0100	4'-0" x 7'-0"	2 Carp	12	1.333	Ea.	540	61		601	690
0140	Oak face, 2'-6" x 6'-8"		14	1.143		450	52.50		502.50	575
0180	3'-0" x 6'-8"		13	1.231		455	56.50		511.50	585
0190	3'-0" x 7'-0"		12	1.333		460	61		521	600
0200	4'-0" x 7'-0"		12	1.333		590	61		651	745
0240	Walnut face, 2'-6" x 6'-8"		14	1.143		470	52.50		522.50	595
0280	3'-0" x 6'-8"		13	1.231		490	56.50		546.50	625
0290	3'-0" x 7'-0"		12	1.333		510	61		571	655
0300	4'-0" x 7'-0"		12	1.333		630	61		691	790
0440	M.D. overlay on hardboard, 2'-6" x 6'-8"		15	1.067		315	49		364	420
0480	3'-0" x 6'-8"		14	1.143		375	52.50		427.50	495
0490	3'-0" x 7'-0"		13	1.231		395	56.50		451.50	520
0500	4'-0" x 7'-0"		12	1.333		415	61		476	550
0740	90 minutes, birch face, 1-3/4" x 2'-6" x 6'-8"		14	1.143		325	52.50		377.50	435
0780	3'-0" x 6'-8"		13	1.231		320	56.50		376.50	435
0790	3'-0" x 7'-0"		12	1.333		385	61		446	520
0800	4'-0" x 7'-0"		12	1.333		540	61		601	685
0840	Oak face, 2'-6" x 6'-8"		14	1.143		430	52.50		482.50	555
0880	3'-0" x 6'-8"		13	1.231		440	56.50		496.50	570
0890	3'-0" x 7'-0"		12	1.333		455	61		516	595
0900	4'-0" x 7'-0"		12	1.333		590	61		651	745
0940	Walnut face, 2'-6" x 6'-8"		14	1.143		400	52.50		452.50	520
0980	3'-0" x 6'-8"		13	1.231		410	56.50		466.50	535
0990	3'-0" x 7'-0"		12	1.333		470	61		531	610
1000	4'-0" x 7'-0"		12	1.333		620	61		681	775
1140	M.D. overlay on hardboard, 2'-6" x 6'-8"		15	1.067		355	49		404	465
1180	3'-0" x 6'-8"		14	1.143		375	52.50		427.50	495
1190	3'-0" x 7'-0"		13	1.231		405	56.50		461.50	530
1200	4'-0" x 7'-0"		12	1.333		455	61		516	595
1240	For 8'-0" height, odd					75			75	82.50
1260	For 8'-0" height walnut, odd					90			90	99
2200	Custam architectural "B" label, flush, 1-3/4" thick, birch,									
2210	Solid core									
2220	2'-6" x 7'-0"	2 Carp	15	1.067	Ea.	305	49		354	410
2260	3'-0" x 7'-0"		14	1.143		315	52.50		367.50	425
2300	4'-0" x 7'-0"		13	1.231		400	56.50		456.50	525
2420	4'-0" x 8'-0"		11	1.455		430	66.50		496.50	580
2480	For oak veneer, odd					50%				
2500	For walnut veneer, add					75%				

08 14 23 – Clad Wood Doors

08 14 23.13 Metal-Faced Wood Doors

0010	METAL-FACED WOOD DOORS									
0020	Interior, flush type, 3' x 7'	2 Carp	4.30	3.721	Opng.	390	171		561	695

08 14 23.20 Tin Clad Wood Doors

0010	TIN CLAD WOOD DOORS									
0020	3 ply, 6' x 7', double sliding, doors only	2 Carp	1	16	Opng.	2,000	735		2,735	3,325
1000	For electric operator, add	1 Elec	2	4	"	3,250	213		3,463	3,900

08 14 Wood Doors

08 14 33 – Stile and Rail Wood Doors

08 14 33.10 Wood Doors Paneled		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WOOD DOORS PANELED									
0020	Interior, six panel, hollow core, 1-3/8" thick									
0040	Molded hordboard, 2'-0" x 6'-8"	2 Corp	17	.941	Eo.	62	43		105	135
0060	2'-6" x 6'-8"		17	.941		64	43		107	137
0070	2'-8" x 6'-8"		17	.941		67	43		110	140
0080	3'-0" x 6'-8"		17	.941		72	43		115	146
0140	Embossed print, molded hordboard, 2'-0" x 6'-8"		17	.941		64	43		107	137
0160	2'-6" x 6'-8"		17	.941		64	43		107	137
0180	3'-0" x 6'-8"		17	.941		72	43		115	146
0540	Six panel, solid, 1-3/8" thick, pine, 2'-0" x 6'-8"		15	1.067		155	49		204	247
0560	2'-6" x 6'-8"		14	1.143*		170	52.50		222.50	268
0580	3'-0" x 6'-8"		13	1.231		145	56.50		201.50	247
1020	Two panel, bored rail, solid, 1-3/8" thick, pine, 1'-6" x 6'-8"		16	1		270	46		316	370
1040	2'-0" x 6'-8"		15	1.067		355	49		404	465
1060	2'-6" x 6'-8"		14	1.143		400	52.50		452.50	520
1340	Two panel, solid, 1-3/8" thick, fir, 2'-0" x 6'-8"		15	1.067		160	49		209	252
1360	2'-6" x 6'-8"		14	1.143		210	52.50		262.50	310
1380	3'-0" x 6'-8"		13	1.231		415	56.50		471.50	540
1740	Five panel, solid, 1-3/8" thick, fir, 2'-0" x 6'-8"		15	1.067		280	49		329	385
1760	2'-6" x 6'-8"		14	1.143		420	52.50		472.50	540
1780	3'-0" x 6'-8"		13	1.231		420	56.50		476.50	545

08 14 33.20 Wood Doors Residential

0010	WOOD DOORS RESIDENTIAL									
0200	Exterior, combination storm & screen, pine									
0260	2'-8" wide	2 Corp	10	1.600	Eo.	300	73.50		373.50	445
0280	3'-0" wide		9	1.778		310	81.50		391.50	465
0300	7'-1" x 3'-0" wide		9	1.778		335	81.50		416.50	495
0400	Full lite, 6'-9" x 2'-6" wide		11	1.455		320	66.50		386.50	455
0420	2'-8" wide		10	1.600		320	73.50		393.50	465
0440	3'-0" wide		9	1.778		325	81.50		406.50	480
0500	7'-1" x 3'-0" wide		9	1.778		355	81.50		436.50	515
0700	Dutch door, pine, 1-3/4" x 2'-8" x 6'-8", minimum		12	1.333		790	61		851	960
0720	Maximum		10	1.600		900	73.50		973.50	1,100
0800	3'-0" wide, minimum		12	1.333		790	61		851	960
0820	Maximum		10	1.600		900	73.50		973.50	1,100
1000	Entrance door, colonial, 1-3/4" x 6'-8" x 2'-8" wide		16	1		500	46		546	615
1020	6 panel pine, 3'-0" wide		15	1.067		445	49		494	565
1100	8 panel pine, 2'-8" wide		16	1		575	46		621	705
1120	3'-0" wide		15	1.067		570	49		619	700
1200	For tempered safety glass lites, (min of 2) odd					76.50			76.50	84.50
1300	Flush, birch, solid core, 1-3/4" x 6'-8" x 2'-8" wide	2 Corp	16	1		113	46		159	196
1320	3'-0" wide		15	1.067		119	49		168	206
1350	7'-0" x 2'-8" wide		16	1		121	46		167	205
1360	3'-0" wide		15	1.067		143	49		192	233
1380	For tempered safety glass lites, odd					103			103	113
2700	Interior, closet, bi-fold, w/hardware, no frame or trim incl.									
2720	Flush, birch, 6'-6" or 6'-8" x 2'-6" wide	2 Corp	13	1.231	Eo.	67.50	56.50		124	162
2740	3'-0" wide		13	1.231		71.50	56.50		128	166
2760	4'-0" wide		12	1.333		109	61		170	215
2780	5'-0" wide		11	1.455		105	66.50		171.50	219
2800	6'-0" wide		10	1.600		128	73.50		201.50	254
3000	Raised panel pine, 6'-6" or 6'-8" x 2'-6" wide		13	1.231		198	56.50		254.50	305

08 14 Wood Doors

08 14 33 – Stile and Rail Wood Doors

08 14 33.20 Wood Doors Residential		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3020	3'-0" wide	2 Corp	13	1.231	Eo.	278	56.50		334.50	390
3040	4'-0" wide		12	1.333		305	61		366	430
3060	5'-0" wide		11	1.455		365	66.50		431.50	505
3080	6'-0" wide		10	1.600		400	73.50		473.50	555
3200	Louvered, pine 6'-6" or 6'-8" x 2'-6" wide		13	1.231		144	56.50		200.50	245
3220	3'-0" wide		13	1.231		208	56.50		264.50	315
3240	4'-0" wide		12	1.333		235	61		296	355
3260	5'-0" wide		11	1.455		262	66.50		328.50	390
3280	6'-0" wide		10	1.600		289	73.50		362.50	435
4400	Bi-passing closet, incl. hardware and frame, no trim incl.									
4420	Flush, louver, 6'-8" x 4'-0" wide	2 Corp	12	1.333	Opng.	176	61		237	289
4440	5'-0" wide		11	1.455		187	66.50		253.50	310
4460	6'-0" wide		10	1.600		209	73.50		282.50	345
4600	Flush, birch, 6'-8" x 4'-0" wide		12	1.333		223	61		284	340
4620	5'-0" wide		11	1.455		212	66.50		278.50	335
4640	6'-0" wide		10	1.600		260	73.50		333.50	400
4800	Louvered, pine, 6'-8" x 4'-0" wide		12	1.333		410	61		471	545
4820	5'-0" wide		11	1.455		395	66.50		461.50	540
4840	6'-0" wide		10	1.600		530	73.50		603.50	700
5000	Poneled, pine, 6'-8" x 4'-0" wide		12	1.333		510	61		571	660
5020	5'-0" wide		11	1.455		410	66.50		476.50	555
5040	6'-0" wide		10	1.600		610	73.50		683.50	785
5042	8'-0" wide		12	1.333		1,025	61		1,086	1,225
6100	Folding accordion, closet, including track and frame									
6120	Vinyl, 2 layer, stock	2 Corp	10	1.600	Eo.	66	73.50		139.50	186
6140	Woven mahogany and vinyl, stock		10	1.600		57	73.50		130.50	176
6160	Wood slots with vinyl overlay, stock		10	1.600		150	73.50		223.50	278
6180	Economy vinyl, stock		10	1.600		41	73.50		114.50	158
6200	Rigid PVC		10	1.600		55	73.50		128.50	174
7310	Possage doors, flush, no frame included									
7320	Hordboard, hollow core, 1-3/8" x 6'-8" x 1'-6" wide	2 Corp	18	.889	Eo.	40.50	41		81.50	108
7330	2'-0" wide		18	.889		43	41		84	111
7340	2'-6" wide		18	.889		47.50	41		88.50	116
7350	2'-8" wide		18	.889		49	41		90	117
7360	3'-0" wide		17	.941		52	43		95	124
7420	Louon, hollow core, 1-3/8" x 6'-8" x 1'-6" wide		18	.889		34	41		75	101
7440	2'-0" wide		18	.889		35	41		76	102
7450	2'-4" wide		18	.889		38.50	41		79.50	106
7460	2'-6" wide		18	.889		38.50	41		79.50	106
7480	2'-8" wide		18	.889		40	41		81	107
7500	3'-0" wide		17	.941		42.50	43		85.50	113
7700	Birch, hollow core, 1-3/8" x 6'-8" x 1'-6" wide		18	.889		41	41		82	108
7720	2'-0" wide		18	.889		42.50	41		83.50	110
7740	2'-6" wide		18	.889		50	41		91	118
7760	2'-8" wide		18	.889		50.50	41		91.50	119
7780	3'-0" wide		17	.941		52	43		95	124
8000	Pine louvered, 1-3/8" x 6'-8" x 1'-6" wide		19	.842		120	38.50		158.50	192
8020	2'-0" wide		18	.889		131	41		172	207
8040	2'-6" wide		18	.889		150	41		191	228
8060	2'-8" wide		18	.889		161	41		202	240
8080	3'-0" wide		17	.941		175	43		218	259
8300	Pine poneled, 1-3/8" x 6'-8" x 1'-6" wide		19	.842		128	38.50		166.50	201
8320	2'-0" wide		18	.889		153	41		194	231

08 14 Wood Doors

08 14 33 – Stile and Rail Wood Doors

08 14 33.20 Wood Doors Residential		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
8330	2'-4" wide	2 Corp	18	.889	Ea.	182	41		223	263
8340	2'-6" wide		18	.889		182	41		223	263
8360	2'-8" wide		18	.889		185	41		226	267
8380	3'-0" wide		17	.941		204	43		247	291

08 14 40 – Interior Cafe Doors

08 14 40.10 Cafe Style Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	CAFE STYLE DOORS									
6520	Interior cafe doors, 2'-6" opening, stack, panel pine	2 Corp	16	1	Ea.	218	46		264	310
6540	3'-0" opening	"	16	1	"	240	46		286	335
6550	Louvered pine									
6560	2'-6" opening	2 Corp	16	1	Ea.	180	46		226	269
8000	3'-0" opening		16	1		193	46		239	283
8010	2'-6" opening, hardwood		16	1		264	46		310	360
8020	3'-0" opening		16	1		281	46		327	380

08 16 Composite Doors

08 16 13 – Fiberglass Doors

08 16 13.10 Entrance Doors, Fiberglass			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	ENTRANCE DOORS, FIBEROUS GLASS										
0020	Exterior, fiberglass, door, 2'-8" wide x 6'-8" high	G	2 Corp	15	1.067	Eo.	259	49		308	360
0040	3'-0" wide x 6'-8" high	G		15	1.067		259	49		308	360
0060	3'-0" wide x 7'-0" high	G		15	1.067		460	49		509	580
0080	3'-0" wide x 6'-8" high, with two lites	G		15	1.067		294	49		343	400
0100	3'-0" wide x 8'-0" high, with two lites	G		15	1.067		495	49		544	620
0110	Half glass, 3'-0" wide x 6'-8" high	G		15	1.067		435	49		484	555
0120	3'-0" wide x 6'-8" high, low e	G		15	1.067		465	49		514	585
0130	3'-0" wide x 8'-0" high	G		15	1.067		580	49		629	715
0140	3'-0" wide x 8'-0" high, low e	G		15	1.067		640	49		689	775
0150	Side lights, 1'-0" wide x 6'-8" high	G					251			251	276
0160	1'-0" wide x 6'-8" high, low e	G					256			256	281
0180	1'-0" wide x 6'-8" high, full glass	G					285			285	315
0190	1'-0" wide x 6'-8" high, low e	G					300			300	330

08 16 14 – French Doors

08 16 14.10 Exterior Doors With Glass Lites			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	EXTERIOR DOORS WITH GLASS LITES										
0020	French, Fir, 1-3/4", 3'-0" wide x 6'-8" high		2 Corp	12	1.333	Eo.	600	61		661	755
0025	Double			12	1.333		1,200	61		1,261	1,425
0030	Maple, 1-3/4", 3'-0" wide x 6'-8" high			12	1.333		675	61		736	840
0035	Double			12	1.333		1,350	61		1,411	1,575
0040	Cherry, 1-3/4", 3'-0" wide x 6'-8" high			12	1.333		790	61		851	960
0045	Double			12	1.333		1,575	61		1,636	1,825
0100	Mahogany, 1-3/4", 3'-0" wide x 8'-0" high			10	1.600		800	73.50		873.50	995
0105	Double			10	1.600		1,600	73.50		1,673.50	1,875
0110	Fir, 1-3/4", 3'-0" wide x 8'-0" high			10	1.600		1,200	73.50		1,273.50	1,450
0115	Double			10	1.600		2,400	73.50		2,473.50	2,775
0120	Oak, 1-3/4", 3'-0" wide x 8'-0" high			10	1.600		1,825	73.50		1,898.50	2,125
0125	Double			10	1.600		3,650	73.50		3,723.50	4,125

08 17 Integrated Door Opening Assemblies

08 17 13 – Integrated Metal Door Opening Assemblies

08 17 13.20 Stainless Steel Doors and Frames		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
STAINLESS STEEL DOORS AND FRAMES							Labor	Equipment		
0010	STAINLESS STEEL DOORS AND FRAMES									
0500	Stainless steel, prehung door, foam core, 14 ga, 3'-0" x 7'-0"	G 2 Corp	5	3.200	Eo.	3,400	147		3,547	3,975
0600	Stainless steel, prehung double door, foam core, 14 ga, 3'-0" x 7'-0"	G "	4	4	"	6,700	183		6,883	7,650

08 17 23 – Integrated Wood Door Opening Assemblies

08 17 23.10 Pre-Hung Doors

0010 PRE-HUNG DOORS										
0300	Exterior, wood, comb. storm & screen, 6'-9" x 2'-6" wide	2 Corp	15	1.067	Eo.	296	49		345	400
0320	2'-8" wide		15	1.067		296	49		345	400
0340	3'-0" wide		15	1.067		305	49		354	410
0360	For 7'-0" high door, add				▼	30			30	33
1600	Entrance door, flush, birch, solid core									
1620	4-5/8" solid jamb, 1-3/4" x 6'-8" x 2'-8" wide	2 Corp	16	1	Eo.	289	46		335	390
1640	3'-0" wide		16	1		375	46		421	485
1642	5-5/8" jamb		16	1		325	46		371	430
1680	For 7'-0" high door, add				▼	25			25	27.50
2000	Entrance door, colonial, 6 panel pine									
2020	4-5/8" solid jamb, 1-3/4" x 6'-8" x 2'-8" wide	2 Corp	16	1	Eo.	640	46		686	775
2040	3'-0" wide	"	16	1		675	46		721	810
2060	For 7'-0" high door, add					54			54	59
2200	For 5-5/8" solid jamb, odd				▼	41.50			41.50	46
4000	Interior, passage door, 4-5/8" solid jamb									
4400	Lauan, flush, solid core, 1-3/8" x 6'-8" x 2'-6" wide	2 Corp	17	.941	Eo.	186	43		229	272
4420	2'-8" wide		17	.941		186	43		229	272
4440	3'-0" wide		16	1		201	46		247	292
4600	Hallow core, 1-3/8" x 6'-8" x 2'-6" wide		17	.941		125	43		168	205
4620	2'-8" wide		17	.941		125	43		168	204
4640	3'-0" wide	▼	16	1		140	46		186	225
4700	For 7'-0" high door, add					35.50			35.50	39
5000	Birch, flush, solid core, 1-3/8" x 6'-8" x 2'-6" wide	2 Corp	17	.941		259	43		302	350
5020	2'-8" wide		17	.941		201	43		244	288
5040	3'-0" wide		16	1		288	46		334	385
5200	Hallow core, 1-3/8" x 6'-8" x 2'-6" wide		17	.941		210	43		253	298
5220	2'-8" wide		17	.941		252	43		295	345
5240	3'-0" wide	▼	16	1		216	46		262	310
5280	For 7'-0" high door, add					30.50			30.50	33.50
5500	Hardboard paneled, 1-3/8" x 6'-8" x 2'-6" wide	2 Corp	17	.941		145	43		188	226
5520	2'-8" wide		17	.941		153	43		196	235
5540	3'-0" wide		16	1		150	46		196	236
6000	Pine paneled, 1-3/8" x 6'-8" x 2'-6" wide		17	.941		255	43		298	350
6020	2'-8" wide		17	.941		274	43		317	365
6040	3'-0" wide	▼	16	1		282	46		328	380
6500	For 5-5/8" solid jamb, add					25			25	27.50
6520	For split jamb, deduct				▼	24			24	26.50

08 31 Access Doors and Panels

08 31 13 – Access Doors and Frames

08 31 13.10 Types of Framed Access Doors

		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	TYPES OF FRAMED ACCESS DOORS									
1000	Fire rated door with lock									
1100	Metal, 12" x 12"	1 Corp	10	.800	Eo.	165	36.50		201.50	239
1150	18" x 18"		9	.889		220	41		261	305
1200	24" x 24"		9	.889		325	41		366	425
1250	24" x 36"		8	1		335	46		381	435
1300	24" x 48"		8	1		430	46		476	545
1350	36" x 36"		7.50	1.067		495	49		544	620
1400	48" x 48"		7.50	1.067		635	49		684	770
1600	Stainless steel, 12" x 12"		10	.800		282	36.50		318.50	365
1650	18" x 18"		9	.889		410	41		451	515
1700	24" x 24"		9	.889		500	41		541	615
1750	24" x 36"	▼	8	1	▼	640	46		686	775
2000	Flush door for finishing									
2100	Metal 8" x 8"	1 Corp	10	.800	Eo.	38	36.50		74.50	98.50
2150	12" x 12"	"	10	.800	"	42	36.50		78.50	103
3000	Recessed door for ocoustic tile									
3100	Metal, 12" x 12"	1 Corp	4.50	1.778	Eo.	82	81.50		163.50	216
3150	12" x 24"		4.50	1.778		95	81.50		176.50	231
3200	24" x 24"		4	2		125	91.50		216.50	280
3250	24" x 36"	▼	4	2	▼	175	91.50		266.50	335
4000	Recessed door for drywall									
4100	Metal 12" x 12"	1 Corp	6	1.333	Eo.	80	61		141	183
4150	12" x 24"		5.50	1.455		114	66.50		180.50	228
4200	24" x 36"	▼	5	1.600		182	73.50		255.50	315
6000	Stondord door									
6100	Metal, 8" x 8"	1 Corp	10	.800	Eo.	45	36.50		81.50	106
6150	12" x 12"		10	.800		50	36.50		86.50	112
6200	18" x 18"		9	.889		70	41		111	140
6250	24" x 24"		9	.889		85	41		126	157
6300	24" x 36"		8	1		125	46		171	209
6350	36" x 36"		8	1		145	46		191	231
6500	Stainless steel, 8" x 8"		10	.800		85	36.50		121.50	150
6550	12" x 12"		10	.800		110	36.50		146.50	178
6600	18" x 18"		9	.889		205	41		246	289
6650	24" x 24"	▼	9	.889	▼	265	41		306	355

08 31 13.20 Bulkhead/Cellar Doors

0010	BULKHEAD/CELLAR DOORS									
0020	Steel, not incl. sides, 44" x 62"	1 Corp	5.50	1.455	Eo.	560	66.50		626.50	720
0100	52" x 73"		5.10	1.569		790	72		862	980
0500	With sides ond foundation plotes, 57" x 45" x 24"		4.70	1.702		810	78		888	1,000
0600	42" x 49" x 51"	▼	4.30	1.860	▼	915	85.50		1,000.50	1,125

08 31 13.30 Commercial Floor Doors

0010	COMMERCIAL FLOOR DOORS									
0020	Aluminum tile, steel frame, one leaf, 2' x 2' opng.	2 Sswk	3.50	4.571	Opng.	800	234		1,034	1,300
0050	3'-6" x 3'-6" opening		3.50	4.571		1,600	234		1,834	2,150
0500	Double leaf, 4' x 4' opening		3	5.333		1,750	273		2,023	2,400
0550	5' x 5' opening	▼	3	5.333	▼	3,100	273		3,373	3,875

08 31 13.35 Industrial Floor Doors

0010	INDUSTRIAL FLOOR DOORS									
0020	Steel 300 psf L.L., single leaf, 2' x 2', 175#	2 Sswk	6	2.667	Opng.	760	136		896	1,075
0050	3' x 3' opening, 300#		5.50	2.909		1,075	149		1,224	1,425

08 31 Access Doors and Panels

08 31 13 – Access Doors and Frames

08 31 13.35 Industrial Floor Doors		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labar	Equipment		
0300	Dauble leaf, 4' x 4' opening, 455#	2 Sswk	5	3.200	Opng.	1,900	164		2,064	2,400
0350	5' x 5' opening, 645#		4.50	3.556		2,750	182		2,932	3,350
1000	Aluminum, 300 psf L.L., single leaf, 2' x 2', 60#		6	2.667		750	136		886	1,075
1050	3' x 3' opening, 100#		5.50	2.909		1,300	149		1,449	1,675
1500	Dauble leaf, 4' x 4' opening, 160#		5	3.200		2,100	164		2,264	2,600
1550	5' x 5' opening, 235#		4.50	3.556		2,800	182		2,982	3,400
2000	Aluminum, 150 psf L.L., single leaf, 2' x 2', 60#		6	2.667		700	136		836	1,000
2050	3' x 3' opening, 95#		5.50	2.909		1,000	149		1,149	1,350
2500	Dauble leaf, 4' x 4' opening, 150#		5	3.200		1,450	164		1,614	1,900
2550	5' x 5' opening, 230#	↓	4.50	3.556	↓	1,950	182		2,132	2,450

08 31 13.40 Kennel Doors

0010	KENNEL DOORS									
0020	2 way, swinging type, 13" x 19" opening	2 Carp	11	1.455	Opng.	90	66.50		156.50	202
0100	17" x 29" opening		11	1.455		110	66.50		176.50	224
0200	9" x 9" opening, electronic with accessories	↓	11	1.455	↓	144	66.50		210.50	261

08 32 Sliding Glass Doors

08 32 13 – Sliding Aluminum-Framed Glass Doors

08 32 13.10 Sliding Aluminum Doors

0010	SLIDING ALUMINUM DOORS									
0350	Aluminum, 5/8" tempered insulated glass, 6' wide									
0400	Premium	2 Carp	4	4	Ea.	1,575	183		1,758	2,000
0450	Economy		4	4		905	183		1,088	1,275
0500	8' wide, premium		3	5.333		1,650	245		1,895	2,200
0550	Economy		3	5.333		1,425	245		1,670	1,925
0600	12' wide, premium		2.50	6.400		2,975	293		3,268	3,725
0650	Economy		2.50	6.400		1,525	293		1,818	2,125
4000	Aluminum, baked on enamel, temp glass, 6'-8" x 10'-0" wide		4	4		1,050	183		1,233	1,450
4020	Insulating glass, 6'-8" x 6'-0" wide		4	4		920	183		1,103	1,300
4040	8'-0" wide		3	5.333		1,075	245		1,320	1,550
4060	10'-0" wide		2	8		1,325	365		1,690	2,025
4080	Anadized, temp glass, 6'-8" x 6'-0" wide		4	4		455	183		638	785
4100	8'-0" wide		3	5.333		575	245		820	1,000
4120	10'-0" wide	↓	2	8	↓	645	365		1,010	1,275

08 32 19 – Sliding Wood-Framed Glass Doors

08 32 19.15 Sliding Glass Vinyl-Clad Wood Doors

0010	SLIDING GLASS VINYL-CLAD WOOD DOORS									
0020	Glass, sliding vinyl clad, insul. glass, 6'-0" x 6'-8"	G	2 Carp	4	4	Opng.	1,500	183	1,683	1,950
0025	6'-0" x 6'-10" high	G		4	4		1,650	183	1,833	2,100
0030	6'-0" x 8'-0" high	G		4	4		1,975	183	2,158	2,450
0050	5'-0" x 6'-8" high	G		4	4		1,500	183	1,683	1,925
0100	8'-0" x 6'-10" high	G		4	4		2,025	183	2,208	2,500
0500	4 leaf, 9'-0" x 6'-10" high	G		3	5.333		3,250	245	3,495	3,950
0600	12'-0" x 6'-10" high	G	↓	3	5.333	↓	3,875	245	4,120	4,650

08 33 Coiling Doors and Grilles

08 33 13 – Coiling Counter Doors

08 33 13.10 Counter Doors, Coiling Type		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	COUNTER DOORS, COILING TYPE									
0020	Manual, incl. frame and hardware, galv. stl., 4' roll-up, 6' long	2 Corp	2	8	Opng.	1,200	365		1,565	1,900
0300	Galvanized steel, UL label		1.80	8.889		1,225	410		1,635	1,975
0600	Stainless steel, 4' high roll-up, 6' long		2	8		2,150	365		2,515	2,925
0700	10' long		1.80	8.889		2,500	410		2,910	3,375
2000	Aluminum, 4' high, 4' long		2.20	7.273		1,475	335		1,810	2,150
2020	6' long		2	8		1,775	365		2,140	2,525
2040	8' long		1.90	8.421		2,000	385		2,385	2,800
2060	10' long		1.80	8.889		2,050	410		2,460	2,875
2080	14' long		1.40	11.429		2,625	525		3,150	3,675
2100	6' high, 4' long		2	8		1,800	365		2,165	2,550
2120	6' long		1.60	10		1,625	460		2,085	2,500
2140	10' long		1.40	11.429		2,150	525		2,675	3,150

08 33 16 – Coiling Counter Grilles

08 33 16.10 Coiling Grilles

0010	COILING GRILLES									
0015	Aluminum, manual, incl. frame, mill finish									
0020	Top coiling, 4' high, 4' long	2 Sswk	3.20	5	Opng.	1,525	256		1,781	2,125
0030	6' long		3.20	5		1,775	256		2,031	2,400
0040	8' long		2.40	6.667		1,975	340		2,315	2,775
0050	12' long		2.40	6.667		2,400	340		2,740	3,250
0060	16' long		1.60	10		2,575	510		3,085	3,725
0070	6' high, 4' long		3.20	5		1,775	256		2,031	2,400
0080	6' long		3.20	5		1,775	256		2,031	2,400
0090	8' long		2.40	6.667		1,775	340		2,115	2,550
0100	12' long		1.60	10		2,325	510		2,835	3,475
0110	16' long		1.20	13.333		2,775	680		3,455	4,250
0200	Side coiling, 8' high, 12' long		.60	26.667		2,325	1,375		3,700	4,950
0220	18' long		.50	32		4,425	1,625		6,050	7,725
0240	24' long		.40	40		3,700	2,050		5,750	7,675
0260	12' high, 12' long		.50	32		3,375	1,625		5,000	6,575
0280	18' long		.40	40		4,950	2,050		7,000	9,050
0300	24' long		.28	57.143		6,650	2,925		9,575	12,500

08 33 23 – Overhead Coiling Doors

08 33 23.10 Coiling Service Doors

0010	COILING SERVICE DOORS Steel, manual, 20 go., incl. hardware									
0050	8' x 8' high	2 Sswk	1.60	10	Eq.	1,125	510		1,635	2,125
0100	10' x 10' high		1.40	11.429		1,850	585		2,435	3,075
0200	20' x 10' high		1	16		3,075	820		3,895	4,825
0300	12' x 12' high		1.20	13.333		1,875	680		2,555	3,275
0400	20' x 12' high		.90	17.778		2,125	910		3,035	3,950
0500	14' x 14' high		.80	20		3,050	1,025		4,075	5,150
0600	20' x 16' high		.60	26.667		3,550	1,375		4,925	6,300
0700	10' x 20' high		.50	32		2,500	1,625		4,125	5,625
1000	12' x 12', crank operated, crank on door side		.80	20		1,700	1,025		2,725	3,675
1100	Crank thru wall		.70	22.857		1,975	1,175		3,150	4,225
1300	For vision panel, odd					345			345	380
1400	For 22 go., deduct				S.F.	1.36			1.36	1.50
1600	3' x 7' pass door within rolling steel door, new construction				Eq.	1,825			1,825	2,025
1700	Existing construction	2 Sswk	2	8		1,950	410		2,360	2,875
2000	Class A fire doors, manual, 20 go., 8' x 8' high		1.40	11.429		1,525	585		2,110	2,700
2100	10' x 10' high		1.10	14.545		2,075	745		2,820	3,600

08 33 Coiling Doors and Grilles

08 33 23 – Overhead Coiling Doors

08 33 23.10 Coiling Service Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2200	20' x 10' high	2 Sswk	.80	20	Eo.	4,250	1,025		5,275	6,475
2300	12' x 12' high		1	16		3,275	820		4,095	5,050
2400	20' x 12' high		.80	20		4,600	1,025		5,625	6,850
2500	14' x 14' high		.60	26.667		3,575	1,375		4,950	6,350
2600	20' x 16' high		.50	32		5,675	1,625		7,300	9,125
2700	10' x 20' high	▼	.40	40	▼	4,450	2,050		6,500	8,500
3000	For 18 ga. doors, odd				S.F.	1.55			1.55	1.71
3300	For enamel finish, odd				"	1.80			1.80	1.98
3600	For safety edge bottom bar, pneumatic, odd				L.F.	21.50			21.50	24
3700	Electric, odd					41			41	45
4000	For weatherstripping, extruded rubber, joints, odd					13.70			13.70	15.05
4100	Head, add					8.45			8.45	9.30
4200	Sill, add				▼	4.86			4.86	5.35
4500	Motor operators, for 14' x 14' opening	2 Sswk	5	3.200	Eo.	1,075	164		1,239	1,500
4600	Over 14' x 14', jock shaft type	"	5	3.200		1,050	164		1,214	1,450
4700	For fire door, additional fusible link, add				▼	27			27	29.50

08 34 Special Function Doors

08 34 13 – Cold Storage Doors

08 34 13.10 Doors for Cold Area Storage

0010	DOORS FOR COLD AREA STORAGE									
0020	Single, 20 ga. galvanized steel									
0300	Horizontal sliding, 5' x 7', manual operation, 3.5" thick	2 Corp	2	8	Eo.	3,225	365		3,590	4,125
0400	4" thick		2	8		3,250	365		3,615	4,150
0500	6" thick		2	8		3,425	365		3,790	4,350
0800	5' x 7', power operation, 2" thick		1.90	8.421		5,600	385		5,985	6,750
0900	4" thick		1.90	8.421		5,700	385		6,085	6,875
1000	6" thick		1.90	8.421		6,500	385		6,885	7,750
1300	9' x 10', manual operation, 2" insulation		1.70	9.412		4,550	430		4,980	5,675
1400	4" insulation		1.70	9.412		4,675	430		5,105	5,825
1500	6" insulation		1.70	9.412		5,575	430		6,005	6,825
1800	Power operation, 2" insulation		1.60	10		7,675	460		8,135	9,150
1900	4" insulation		1.60	10		7,900	460		8,360	9,375
2000	6" insulation	▼	1.70	9.412	▼	8,850	430		9,280	10,400
2300	For stainless steel face, odd					25%				
3000	Hinged, lightweight, 3' x 7'-0", 2" thick	2 Corp	2	8	Eo.	1,425	365		1,790	2,125
3050	4" thick		1.90	8.421		1,775	385		2,160	2,550
3300	Aluminum doors, 3' x 7'-0", 4" thick		1.90	8.421		1,350	385		1,735	2,075
3350	6" thick		1.40	11.429		2,350	525		2,875	3,375
3600	Stainless steel, 3' x 7'-0", 4" thick		1.90	8.421		1,725	385		2,110	2,500
3650	6" thick		1.40	11.429		2,950	525		3,475	4,025
3900	Pointed, 3' x 7'-0", 4" thick		1.90	8.421		1,275	385		1,660	2,000
3950	6" thick	▼	1.40	11.429	▼	2,350	525		2,875	3,375
5000	Bi-parting, electric operated									
5010	6' x 8' opening, galv. faces, 4" thick for cooler	2 Corp	.80	20	Opng.	7,225	915		8,140	9,350
5050	For freezer, 4" thick		.80	20		7,950	915		8,865	10,200
5300	For door buck forming and door protection, odd		2.50	6.400		640	293		933	1,150
6000	Galvanized bottom door, galvanized hinges, 4' x 7'		2	8		1,825	365		2,190	2,600
6050	6' x 8'		1.80	8.889		2,475	410		2,885	3,350
6500	Fire door, 3 hr., 6' x 8', single slide		.80	20		8,275	915		9,190	10,500
6550	Double, bi-parting	▼	.70	22.857	▼	12,200	1,050		13,250	15,000

08 34 Special Function Doors

08 34 16 – Hangar Doors

08 34 16.10 Aircraft Hangar Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	AIRCRAFT HANGAR DOORS									
0020	Bi-fold, ovhd., 20 psf wind load, incl. elec. oper.									
0100	12' high x 40'	2 Sswk	240	.067	S.F.	16.40	3.41		19.81	24
0200	16' high x 60'		230	.070		19.70	3.56		23.26	28
0300	20' high x 80'		220	.073		21.50	3.72		25.22	30

08 34 36 – Darkroom Doors

08 34 36.10 Various Types of Darkroom Doors

0010	VARIOUS TYPES OF DARKROOM DOORS									
0015	Revolving, standard, 2 way, 36" diameter	2 Corp	3.10	5.161	Opng.	2,525	237		2,762	3,150
0020	41" diameter		3.10	5.161	"	2,825	237		3,062	3,500
0050	3 way, 51" diameter		1.40	11.429		3,675	525		4,200	4,850
1000	4 way, 49" diameter		1.40	11.429		3,575	525		4,100	4,750
2000	Hinged safety, 2 way, 41" diameter		2.30	6.957		3,300	320		3,620	4,125
2500	3 way, 51" diameter		1.40	11.429		3,650	525		4,175	4,825
3000	Pop out safety, 2 way, 41" diameter		3.10	5.161		3,925	237		4,162	4,675
4000	3 way, 51" diameter		1.40	11.429		4,775	525		5,300	6,050
5000	Wheelchair-type, pop out, 51" diameter		1.40	11.429		5,675	525		6,200	7,050
5020	72" diameter		.90	17.778		7,800	815		8,615	9,825
9300	For complete darkrooms, see Section 13 21 53.50									

08 34 53 – Security Doors and Frames

08 34 53.20 Steel Door

0010	STEEL DOOR with ballistic core and welded frame both 14 ga.									
0050	Flush, UL 752 Level 3, 1-3/4", 3'-0" x 6'-8"	2 Corp	1.50	10.667	Opng.	2,300	490		2,790	3,275
0055	1-3/4", 3'-6" x 6'-8"		1.50	10.667		2,400	490		2,890	3,400
0060	1-3/4", 4'-0" x 6'-8"		1.20	13.333		2,625	610		3,235	3,825
0100	UL 752 Level 8, 1-3/4", 3'-0" x 6'-8"		1.50	10.667		10,100	490		10,590	11,900
0105	1-3/4", 3'-6" x 6'-8"		1.50	10.667		10,200	490		10,690	12,000
0110	1-3/4", 4'-0" x 6'-8"		1.20	13.333		11,600	610		12,210	13,700
0120	UL 752 Level 3, 1-3/4", 3'-0" x 7'-0"		1.50	10.667		2,325	490		2,815	3,325
0125	1-3/4", 3'-6" x 7'-0"		1.50	10.667		2,450	490		2,940	3,425
0130	1-3/4", 4'-0" x 7'-0"		1.20	13.333		2,650	610		3,260	3,875
0150	UL 752 Level 8, 1-3/4", 3'-0" x 7'-0"		1.50	10.667		10,200	490		10,690	12,000
0155	1-3/4", 3'-6" x 7'-0"		1.50	10.667		10,200	490		10,690	12,000
0160	1-3/4", 4'-0" x 7'-0"		1.20	13.333		11,700	610		12,310	13,800
1000	Safe Room sliding door and hardware, 1-3/4", 3'-0" x 7'-0" UL 752 Level 3		.50	32		23,300	1,475		24,775	27,900
1050	Safe Room swinging door and hardware, 1-3/4", 3'-0" x 7'-0" UL 752 Level 3		.50	32		27,800	1,475		29,275	32,900

08 34 53.30 Wood Ballistic Doors

0010	WOOD BALLISTIC DOORS with frames and hardware									
0050	Wood, 1-3/4", 3'-0" x 7'-0" UL 752 Level 3	2 Corp	1.50	10.667	Opng.	2,225	490		2,715	3,200

08 34 56 – Security Gates

08 34 56.10 Gates

0010	GATES									
0015	Driveway Gates include mounting hardware									
0500	Wood, security gate, driveway, dual, 10' wide	H-4	.80	25	Opng.	3,900	1,075		4,975	5,950
0505	12' wide		.80	25		4,300	1,075		5,375	6,375
0510	15' wide		.80	25		5,100	1,075		6,175	7,250
0600	Steel, security gate, driveway, single, 10' wide		.80	25		2,150	1,075		3,225	4,000
0605	12' wide		.80	25		2,225	1,075		3,300	4,075
0620	Steel, security gate, driveway, dual, 12' wide		.80	25		2,050	1,075		3,125	3,925
0625	14' wide		.80	25		2,200	1,075		3,275	4,075

08 34 Special Function Doors

08 34 56 – Security Gates

08 34 56.10 Gates		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0630	16' wide	H-4	.80	25	Opng.	2,525	1,075		3,600	4,425
0700	Aluminum, security gate, driveway, dual, 10' wide		.80	25		3,000	1,075		4,075	4,950
0705	12' wide		.80	25		3,200	1,075		4,275	5,175
0710	16' wide	▼	.80	25	▼	3,700	1,075		4,775	5,725
1000	Security gate, driveway, opener 12 VDC				Ea.	700			700	770
1010	Wireless					1,700			1,700	1,875
1020	Security gate, driveway, apener 24 VDC					1,100			1,100	1,200
1030	Wireless					1,300			1,300	1,425
1040	Security gate, driveway, apener 12 VDC, solar panel 10 watt	1 Elec	2	4		200	213		413	540
1050	20 watt	"	2	4		320	213		533	670

08 34 59 – Vault Doors and Day Gates

08 34 59.10 Secure Storage Doors

0010 SECURE STORAGE DOORS										
0020	Door and frame, 32" x 78", clear opening									
0100	1 hour test, 32" door, weighs 750 lb.	2 Sswk	1.50	10.667	Opng.	6,600	545		7,145	8,200
0200	2 hour test, 32" door, weighs 950 lb.		1.30	12.308		8,125	630		8,755	10,000
0250	40" door, weighs 1130 lb.		1	16		9,200	820		10,020	11,600
0300	4 hour test, 32" door, weighs 1025 lb.		1.20	13.333		8,550	680		9,230	10,600
0350	40" door, weighs 1140 lb.	▼	.90	17.778		9,900	910		10,810	12,500
0500	For stainless steel front, including frame, add to above					2,100			2,100	2,300
0550	Back, add					2,000			2,000	2,200
0600	For time lock, two movement, add	1 Elec	2	4	Ea.	2,250	213		2,463	2,800
0650	Three movement, add	"	2	4		2,200	213		2,413	2,750
0800	Day gate, painted, steel, 32" wide	2 Sswk	1.50	10.667		1,900	545		2,445	3,025
0850	40" wide		1.40	11.429		2,100	585		2,685	3,325
0900	Aluminum, 32" wide		1.50	10.667		3,150	545		3,695	4,425
0950	40" wide	▼	1.40	11.429	▼	3,350	585		3,935	4,725
2050	Security vault door, class I, 3' wide, 3 1/2" thick	E-24	.19	166	Opng.	15,700	8,425	3,875	28,000	36,000
2100	Class II, 3' wide, 7" thick		.19	166		18,600	8,425	3,875	30,900	39,200
2150	Class III, 9R, 3' wide, 10" thick, minimum		.13	250		23,500	12,600	5,825	41,925	53,500
2160	Class V, type 1, 40" door		2.48	12.903	Ea.	7,125	650	300	8,075	9,250
2170	Class V, type 2, 40" door		2.48	12.903		6,850	650	300	7,800	8,950
2180	Day gate for class V vault	2 Sswk	2	8	▼	2,025	410		2,435	2,950

08 34 63 – Detention Doors and Frames

08 34 63.13 Steel Detention Doors and Frames

0010	STEEL DETENTION DOORS AND FRAMES										
0500	Rolling cell door, bar front, 7/8" bars, 4" O.C., 7' H, 5' W, with hardware	G	E-4	2	16	Ea.	5,275	825	71	6,171	7,325
0550	Actuator for rolling cell door, bar front		2 Skwk	2	8		4,200	380		4,580	5,200
1000	Doors & frames, 3' x 7', complete, with hardware, single plate		E-4	4	8		4,600	415	35.50	5,050.50	5,825
1650	Double plate		"	4	8		5,600	415	35.50	6,050.50	6,925

08 34 73 – Sound Control Door Assemblies

08 34 73.10 Acoustical Doors

0010	ACOUSTICAL DOORS											
0020	Including framed seals, 3' x 7', waad, 40 STC rating				2 Carp	1.50	10.667	Ea.	1,300	490	1,790	2,175
0100	Steel, 41 STC rating					1.50	10.667		3,200	490	3,690	4,275
0200	45 STC rating					1.50	10.667		3,600	490	4,090	4,700
0300	48 STC rating					1.50	10.667		4,200	490	4,690	5,375
0400	52 STC rating				▼	1.50	10.667	▼	4,800	490	5,290	6,025

08 36 Panel Doors

08 36 13 – Sectional Doors

08 36 13.10 Overhead Commercial Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 OVERHEAD COMMERCIAL DOORS							Labor	Equipment		
1000	Stock, sectional, heavy duty, wood, 1-3/4" thick, 8' x 8' high	2 Corp	2	8	Eo.	1,025	365		1,390	1,700
1100	10' x 10' high		1.80	8.889		1,475	410		1,885	2,250
1200	12' x 12' high		1.50	10.667		2,025	490		2,515	2,975
1300	Chain hoist, 14' x 14' high		1.30	12.308		3,250	565		3,815	4,425
1400	12' x 16' high		1	16		3,225	735		3,960	4,650
1500	20' x 8' high		1.30	12.270		2,825	565		3,390	3,975
1600	20' x 16' high		.65	24.615		5,325	1,125		6,450	7,600
1800	Center mullion openings, 8' high		4	4		1,225	183		1,408	1,625
1900	20' high		2	8		2,050	365		2,415	2,825
2100	For medium duty custom door, deduct					5%	5%			
2150	For medium duty stock doors, deduct					10%	5%			
2300	Fiberglass and aluminum, heavy duty, sectional, 12' x 12' high	2 Corp	1.50	10.667	Eo.	2,700	490		3,190	3,725
2450	Chain hoist, 20' x 20' high		.50	32		6,675	1,475		8,150	9,625
2600	Steel, 24 ga. sectional, monoval, 8' x 8' high		2	8		810	365		1,175	1,450
2650	10' x 10' high		1.80	8.889		1,100	410		1,510	1,825
2700	12' x 12' high		1.50	10.667		1,325	490		1,815	2,200
2800	Chain hoist, 20' x 14' high		.70	22.857		3,700	1,050		4,750	5,700
2850	For 1-1/4" rigid insulation and 26 ga. galv.									
2860	back panel, add				S.F.	4.70			4.70	5.15
2900	For electric trolley operator, 1/3 H.P., to 12' x 12', add	1 Corp	2	4	Eo.	935	183		1,118	1,300
2950	Over 12' x 12', 1/2 H.P., add		1	8		1,100	365		1,465	1,800
2980	Overhead, for row of clear lites add		1	8		110	365		475	685

08 36 13.20 Residential Garage Doors

0010 RESIDENTIAL GARAGE DOORS										
0050	Hinged, wood, custom, double door, 9' x 7'	2 Corp	4	4	Ea.	715	183		898	1,075
0070	16' x 7'		3	5.333		1,100	245		1,345	1,575
0200	Overhead, sectional, incl. hardware, fiberglass, 9' x 7', standard		5.28	3.030		930	139		1,069	1,250
0220	Deluxe		5.28	3.030		1,150	139		1,289	1,475
0300	16' x 7', standard		6	2.667		1,575	122		1,697	1,925
0320	Deluxe		6	2.667		2,150	122		2,272	2,550
0500	Hardboard, 9' x 7', standard		8	2		590	91.50		681.50	790
0520	Deluxe		8	2		815	91.50		906.50	1,050
0600	16' x 7', standard		6	2.667		1,225	122		1,347	1,550
0620	Deluxe		6	2.667		1,425	122		1,547	1,775
0700	Metal, 9' x 7', standard		5.28	3.030		685	139		824	970
0720	Deluxe		8	2		910	91.50		1,001.50	1,150
0800	16' x 7', standard		3	5.333		870	245		1,115	1,325
0820	Deluxe		6	2.667		1,400	122		1,522	1,750
0900	Wood, 9' x 7', standard		8	2		920	91.50		1,011.50	1,150
0920	Deluxe		8	2		2,150	91.50		2,241.50	2,500
1000	16' x 7', standard		6	2.667		1,625	122		1,747	2,000
1020	Deluxe		6	2.667		3,025	122		3,147	3,525
1800	Door hardware, sectional	1 Corp	4	2		330	91.50		421.50	505
1810	Door tracks only		4	2		163	91.50		254.50	320
1820	One side only		7	1.143		112	52.50		164.50	204
3000	Swing-up, including hardware, fiberglass, 9' x 7', standard	2 Corp	8	2		1,000	91.50		1,091.50	1,250
3020	Deluxe		8	2		1,100	91.50		1,191.50	1,350
3100	16' x 7', standard		6	2.667		1,250	122		1,372	1,575
3120	Deluxe		6	2.667		1,600	122		1,722	1,950
3200	Hardboard, 9' x 7', standard		8	2		550	91.50		641.50	745
3220	Deluxe		8	2		650	91.50		741.50	855

08 36 Panel Doors

08 36 13 – Sectional Doors

08 36 13.20 Residential Garage Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3300	16' x 7', standard	2 Carp	6	2.667	Ea.	670	122		792	925
3320	Deluxe		6	2.667		850	122		972	1,125
3400	Metal, 9' x 7', standard		8	2		600	91.50		691.50	800
3420	Deluxe		8	2		965	91.50		1,056.50	1,200
3500	16' x 7', standard		6	2.667		800	122		922	1,075
3520	Deluxe		6	2.667		1,100	122		1,222	1,400
3600	Wood, 9' x 7', standard		8	2		700	91.50		791.50	910
3620	Deluxe		8	2		1,125	91.50		1,216.50	1,375
3700	16' x 7', standard		6	2.667		900	122		1,022	1,175
3720	Deluxe	▼	6	2.667		2,100	122		2,222	2,500
3900	Door hardware only, swing up	1 Carp	4	2		168	91.50		259.50	325
3920	One side only		7	1.143		90	52.50		142.50	180
4000	For electric operator, economy, add		8	1		425	46		471	540
4100	Deluxe, including remote control		8	1		610	46		656	745
4500	For transmitter/receiver control , add to operator				Total	110			110	121
4600	Transmitters, additional				"	60			60	66

08 36 19 – Multi-Leaf Vertical Lift Doors

08 36 19.10 Sectional Vertical Lift Doors

SECTIONAL VERTICAL LIFT DOORS										
0010										
0020	Motorized, 14 ga. steel, incl. frame and control panel									
0050	16' x 16' high	L-10	.50	48	Ea.	21,500	2,475	1,325	25,300	29,300
0100	10' x 20' high		1.30	18.462		31,900	950	510	33,360	37,300
0120	15' x 20' high		1.30	18.462		39,500	950	510	40,960	45,600
0140	20' x 20' high		1	24		45,900	1,225	665	47,790	53,500
0160	25' x 20' high		1	24		52,500	1,225	665	54,390	61,000
0170	32' x 24' high		.75	32		46,400	1,650	885	48,935	54,500
0180	20' x 25' high		1	24		54,000	1,225	665	55,890	62,500
0200	25' x 25' high		.70	34.286		61,000	1,775	945	63,720	71,000
0220	25' x 30' high		.70	34.286		68,000	1,775	945	70,720	78,500
0240	30' x 30' high		.70	34.286		79,000	1,775	945	81,720	91,000
0260	35' x 30' high	▼	.70	34.286	▼	89,000	1,775	945	91,720	102,000

08 36 23 – Telescoping Vertical Lift Doors

08 36 23.10 Telescoping Steel Doors

TELESCOPING STEEL DOORS										
0010										
1000	Overhead, .03" thick, electric operated, 10' x 10'	E-3	.80	30	Ea.	14,700	1,550	178	16,428	19,100
2000	20' x 10'		.60	40		18,800	2,075	237	21,112	24,600
3000	20' x 16'		.40	60		19,000	3,100	355	22,455	26,800

08 38 Traffic Doors

08 38 13 – Flexible Strip Doors

08 38 13.10 Flexible Transparent Strip Doors

FLEXIBLE TRANSPARENT STRIP DOORS										
0010										
0100	12" strip width, 2/3 overlap	3 Shee	135	.178	SF Surf	7.60	9.70		17.30	23
0200	Full overlap		115	.209		9.60	11.40		21	28
0220	8" strip width, 1/2 overlap		140	.171		6.20	9.40		15.60	21
0240	Full overlap	▼	120	.200	▼	7.80	10.95		18.75	25.50
0300	Add for suspension system, header mount				L.F.	9.10			9.10	10
0400	Wall mount				"	9.40			9.40	10.35

08 38 Traffic Doors

08 38 19 – Rigid Traffic Doors

08 38 19.20 Double Acting Swing Doors

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	DOUBLE ACTING SWING DOORS									
1000	.063" aluminum, 7'-0" high, 4'-0" wide	2 Carp	4.20	3.810	Pr.	2,100	175		2,275	2,575
1025	6'-0" wide		4	4		2,200	183		2,383	2,700
1050	6'-8" wide		4	4		2,400	183		2,583	2,925
2000	Solid core wood, 3/4" thick, metal frame, stainless steel									
2010	base plate, 7' high opening, 4' wide	2 Carp	4	4	Pr.	2,600	183		2,783	3,125
2050	7' wide	"	3.80	4.211	"	2,800	193		2,993	3,375

08 38 19.30 Shock Absorbing Doors

0010	SHOCK ABSORBING DOORS									
0020	Rigid, no frame, 1-1/2" thick, 5' x 7'	2 Sswk	1.90	8.421	Opng.	1,400	430		1,830	2,300
0100	8' x 8'		1.80	8.889		2,000	455		2,455	3,000
0500	Flexible, no frame, insulated, .16" thick, economy, 5' x 7'		2	8		1,750	410		2,160	2,650
0600	Deluxe		1.90	8.421		2,625	430		3,055	3,625
1000	8' x 8' opening, economy		2	8		2,750	410		3,160	3,750
1100	Deluxe		1.90	8.421		3,500	430		3,930	4,600

08 41 Entrances and Storefronts

08 41 13 – Aluminum-Framed Entrances and Storefronts

08 41 13.20 Tube Framing

0010	TUBE FRAMING , For window walls and store fronts, aluminum stock									
0050	Plain tube frame, mill finish, 1-3/4" x 1-3/4"	2 Glaz	103	.155	L.F.	9.75	6.85		16.60	21
0150	1-3/4" x 4"		98	.163		13.20	7.20		20.40	25.50
0200	1-3/4" x 4-1/2"		95	.168		14.85	7.40		22.25	27.50
0250	2" x 6"		89	.180		22.50	7.90		30.40	36.50
0350	4" x 4"		87	.184		25.50	8.10		33.60	40.50
0400	4-1/2" x 4-1/2"		85	.188		28	8.30		36.30	43
0450	Glass bead		240	.067		2.93	2.94		5.87	7.70
1000	Flush tube frame, mill finish, 1/4" glass, 1-3/4" x 4", open header		80	.200		12.65	8.80		21.45	27.50
1050	Open sill		82	.195		10.30	8.60		18.90	24.50
1100	Closed back header		83	.193		18.20	8.50		26.70	33
1150	Closed back sill		85	.188		17.35	8.30		25.65	31.50
1160	Tube frmg., spandrel cover both sides, alum 1" wide	1 Sswk	85	.094	S.F.	97	4.81		101.81	116
1170	Tube frmg., spandrel cover both sides, alum 2" wide	"	85	.094	"	37.50	4.81		42.31	50
1200	Vertical mullion, one piece	2 Glaz	75	.213	L.F.	19.05	9.40		28.45	35.50
1250	Two piece		73	.219		20	9.65		29.65	36.50
1300	90° or 180° vertical corner past		75	.213		31	9.40		40.40	48.50
1400	1-3/4" x 4-1/2", open header		80	.200		15.40	8.80		24.20	30.50
1450	Open sill		82	.195		12.90	8.60		21.50	27.50
1500	Closed back header		83	.193		18.35	8.50		26.85	33
1550	Closed back sill		85	.188		18.15	8.30		26.45	32.50
1600	Vertical mullion, one piece		75	.213		20.50	9.40		29.90	37
1650	Two piece		73	.219		21.50	9.65		31.15	38
1700	90° or 180° vertical corner past		75	.213		22	9.40		31.40	38.50
2000	Flush tube frame, mil fin., ins. glass w/thml brk, 2" x 4-1/2", open header		75	.213		16	9.40		25.40	32
2050	Open sill		77	.208		13.45	9.15		22.60	28.50
2100	Closed back header		78	.205		15	9.05		24.05	30.50
2150	Closed back sill		80	.200		16.15	8.80		24.95	31
2200	Vertical mullion, one piece		70	.229		16.70	10.05		26.75	33.50
2250	Two piece		68	.235		18	10.35		28.35	35.50
2300	90° or 180° vertical corner past		70	.229		17.20	10.05		27.25	34

08 41 Entrances and Storefronts

08 41 13 – Aluminum-Framed Entrances and Storefronts

08 41 13.20 Tube Framing		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5000	Flush tube frame, mill fin., thermal brk., 2-1/4" x 4-1/2", open header	2 Glaz	74	.216	L.F.	16.60	9.50		26.10	33
5050	Open sill		75	.213		14.80	9.40		24.20	30.50
5100	Vertical mullian, one piece		69	.232		17.15	10.20		27.35	34.50
5150	Two piece		67	.239		21	10.50		31.50	39
5200	90° or 180° vertical corner past		69	.232		18.50	10.20		28.70	36
6980	Door stop (snap in)	▼	380	.042	▼	3.35	1.85		5.20	6.50
7000	Far joints, 90°, clip type, add				Ea.	25			25	27.50
7050	Screw spline joint, add				▼	23.50			23.50	26
7100	Far joint other than 90°, add				▼	49			49	54
8000	For bronze anadized aluminum, add					15%				
8020	Far black finish, add					30%				
8050	Far stoinless steel materials, add					350%				
8100	For manumental grode, add					53%				
8150	For steel stiffener, add	2 Glaz	200	.080	L.F.	11.25	3.52		14.77	17.75
8200	For 2 to 5 stories, add per story				Story		8%			

08 41 19 – Stainless-Steel-Framed Entrances and Storefronts

08 41 19.10 Stainless-Steel and Glass Entrance Unit										
0010	STAINLESS-STEEL AND GLASS ENTRANCE UNIT, narrow stiles									
0020	3' x 7' opening, including hardware, minimum	2 Sswk	1.60	10	Opng.	6,600	510		7,110	8,150
0050	Average		1.40	11.429		7,050	585		7,635	8,775
0100	Maximum		1.20	13.333		7,600	680		8,280	9,550
1000	Far solid branze entrance units, statuary finish, add				▼	64%				
1100	Without statuary finish, add				▼	45%				
2000	Balanced doors, 3' x 7', economy	2 Sswk	.90	17.778	Ea.	8,950	910		9,860	11,400
2100	Premium	"	.70	22.857	"	15,300	1,175		16,475	18,900

08 41 26 – All-Glass Entrances and Storefronts

08 41 26.10 Window Walls Aluminum, Stock										
0010	WINDOW WALLS ALUMINUM, STOCK, including glazing									
0020	Minimum	H-2	160	.150	S.F.	44.50	6.25		50.75	58.50
0050	Average		140	.171		61.50	7.15		68.65	78.50
0100	Moximum		110	.218		168	9.05		177.05	199
0500	Far translucent sandwich wall systems, see Section 07 41 33.10									
0850	Cast of the above walls depends on material,									
0860	finish, repetition, and size of units.									
0870	The larger the opening, the lower the S.F. cost									
1200	Double glazed ocoustical window woll for airports,									
1220	including 1" thick glass with 2" x 4-1/2" tube frame	H-2	40	.600	S.F.	115	25		140	165

08 42 Entrances

08 42 26 – All-Glass Entrances

08 42 26.10 Swinging Glass Doors										
0010	SWINGING GLASS DOORS									
0020	Including hardware, 1/2" thick, tempered, 3' x 7' opening	2 Glaz	2	8	Opng.	2,200	350		2,550	2,925
0100	6' x 7' opening	"	1.40	11.429	"	4,300	505		4,805	5,500

08 42 29 – Automatic Entrances

08 42 29.23 Sliding Automatic Entrances										
0010	SLIDING AUTOMATIC ENTRANCES 12' x 7'-6" apng., 5' x 7' door, 2 woy traffic									
0020	Mat or electronic activoted, ponic pushout, incl. operator & hardware,									
0030	nat including glass or glazing	2 Glaz	.70	22.857	Opng.	8,200	1,000		9,200	10,600

08 42 Entrances

08 42 33 – Revolving Door Entrances

08 42 33.10 Circular Rotating Entrance Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	CIRCULAR ROTATING ENTRANCE DOORS, Aluminum									
0020	6'-10" to 7' high, stock units, minimum	4 Sswk	.75	42.667	Opng.	20,400	2,175		22,575	26,300
0050	Average		.60	53.333		24,600	2,725		27,325	31,800
0100	Maximum		.45	71.111		42,000	3,625		45,625	52,500
1000	Stainless steel		.30	105		40,000	5,425		45,425	53,500
1100	Solid bronze		.15	213		47,100	10,900		58,000	71,000
1500	For automatic controls, add	2 Elec	2	8		15,100	425		15,525	17,200

08 42 36 – Balanced Door Entrances

08 42 36.10 Balanced Entrance Doors

0010	BALANCED ENTRANCE DOORS									
0020	Hardware & frame, alum. & glass, 3' x 7', ecan.	2 Sswk	.90	17.778	Eq.	6,600	910		7,510	8,875
0150	Premium	"	.70	22.857	"	7,925	1,175		9,100	10,800

08 43 Storefronts

08 43 13 – Aluminum-Framed Storefronts

08 43 13.10 Aluminum-Framed Entrance Doors and Frames

0010	ALUMINUM-FRAMED ENTRANCE DOORS AND FRAMES									
0015	Standard hardware and glass stops but no glass									
0020	Entrance door, 3' x 7' opening, clear anodized finish	2 Sswk	7	2.286	Opng.	495	117		612	750
0040	Bronze finish		7	2.286		520	117		637	775
0060	Black finish		7	2.286		575	117		692	835
0220	Bronze finish		7	2.286		625	117		742	895
0240	Black finish		7	2.286		700	117		817	975
0500	6' x 7' opening, clear finish		6	2.667		815	136		951	1,125
0520	Bronze finish		6	2.667		890	136		1,026	1,225
0540	Black finish		6	2.667		970	136		1,106	1,325
1000	With 3' high transom above, 3' x 7' opening, clear finish		5.50	2.909		490	149		639	800
1050	Bronze finish		5.50	2.909		510	149		659	820
1100	Black finish		5.50	2.909		535	149		684	845
1300	3'-6" x 7'-0" opening, clear finish		5.50	2.909		340	149		489	635
1320	Bronze finish		5.50	2.909		355	149		504	655
1340	Black finish		5.50	2.909		365	149		514	660
1500	6' x 7' opening, clear finish		5.50	2.909		595	149		744	915
1550	Bronze finish		5.50	2.909		615	149		764	935
1600	Black finish		5.50	2.909		675	149		824	1,000

08 43 13.20 Storefront Systems

0010	STOREFRONT SYSTEMS, aluminum frame clear 3/8" plate glass									
0020	incl. 3' x 7' door with hardware (400 sq. ft. max. wall)									
0500	Wall height to 12' high, commercial grade	2 Glaz	150	.107	S.F.	21	4.70		25.70	30
0600	Institutional grade		130	.123		26	5.40		31.40	37
0700	Monumental grade		115	.139		39	6.15		45.15	52.50
1000	6' x 7' door with hardware, commercial grade		135	.119		21	5.20		26.20	31
1100	Institutional grade		115	.139		29	6.15		35.15	41.50
1200	Monumental grade		100	.160		53	7.05		60.05	69
1500	For bronze anodized finish, add					15%				
1600	For black anodized finish, add					36%				
1700	For stainless steel framing, add to monumental					78%				

08 43 Storefronts

08 43 29 – Sliding Storefronts

08 43 29.10 Sliding Panels		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labar	Equipment		
0010	SLIDING PANELS									
0020	Wall fronts, aluminum & glass, 15' x 9' high	2 Glaz	1.30	12.308	Opng.	3,375	540		3,915	4,525
0100	24' x 9' high		.70	22.857		4,800	1,000		5,800	6,800
0200	48' x 9' high, with fixed panels		.90	17.778		8,950	785		9,735	11,000
0500	Far bronze finish, add					17%				

08 44 Curtain Wall and Glazed Assemblies

08 44 13 – Glazed Aluminum Curtain Walls

08 44 13.10 Glazed Curtain Walls

0010	GLAZED CURTAIN WALLS, aluminum, stack, including glazing									
0020	Minimum	H-1	205	.156	S.F.	35	7.45		42.45	51
0050	Average, single glazed		195	.164		51	7.80		58.80	69
0150	Average, double glazed		180	.178		65.50	8.45		73.95	86.50
0200	Maximum		160	.200		176	9.50		185.50	209

08 45 Translucent Wall and Roof Assemblies

08 45 10 – Translucent Roof Assemblies

08 45 10.10 Skyroofs

0010	SKYROOFS, Translucent panels, 2-3/4" thick									
0020	Under 5000 S.F.	G-3	395	.081	SF Hor.	35	3.70		38.70	44
0100	Over 5000 S.F.		465	.069		32.50	3.14		35.64	41
0300	Continuous vaulted, semi-circular, to 8' wide, double glazed	G	145	.221		54	10.10		64.10	75
0400	Single glazed		160	.200		37	9.15		46.15	54.50
0600	To 20' wide, single glazed		175	.183		48	8.35		56.35	65.50
0700	Over 20' wide, single glazed		200	.160		47	7.30		54.30	62.50
0900	Matarized apening type, single glazed, 1/3 apening		145	.221		46.50	10.10		56.60	67
1000	Full apening		130	.246		53	11.25		64.25	76
1200	Pyramid type units, self-supporting, to 30' clear apening,									
1300	square or circular, single glazed, minimum	G-3	200	.160	SF Hor.	28.50	7.30		35.80	42.50
1310	Average		165	.194		38.50	8.85		47.35	56
1400	Maximum		130	.246		56	11.25		67.25	79.50
1500	Grid type, 4' to 10' modules, single glass glazed, minimum		200	.160		37.50	7.30		44.80	52.50
1550	Maximum		128	.250		58	11.40		69.40	81
1600	Prefarmed acrylic, minimum		300	.107		49.50	4.87		54.37	61.50
1650	Maximum		175	.183		62	8.35		70.35	81.50
1800	Skyraafs, dame type, self-supporting, to 100' clear apening, circular									
1900	Rise to span ratio = 0.20									
1920	Minimum	G-3	197	.162	SF Hor.	16.10	7.40		23.50	29
1950	Maximum		113	.283		53.50	12.95		66.45	79
2100	Rise to span ratio = 0.33, minimum		169	.189		32	8.65		40.65	49
2150	Maximum		101	.317		63	14.45		77.45	91.50
2200	Rise to span ratio = 0.50, minimum		148	.216		48	9.90		57.90	68
2250	Maximum		87	.368		70	16.80		86.80	103
2400	Ridge units, continuous, to 8' wide, double	G	130	.246		122	11.25		133.25	151
2500	Single	G	200	.160		84.50	7.30		91.80	104
2700	Ridge and furrow units, aver 4' O.C., double, minimum	G	200	.160		26.50	7.30		33.80	40
2750	Maximum	G	120	.267		52	12.20		64.20	75.50
2800	Single, minimum		214	.150		22.50	6.85		29.35	35.50
2850	Maximum		153	.209		47.50	9.55		57.05	67

08 45 Translucent Wall and Roof Assemblies

08 45 10 – Translucent Roof Assemblies

08 45 10.10 Skyroofs			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
3000	Rolling roof, translucent panels, flat roof, minimum		G-3	253	.126	S.F.	20.50	5.80		26.30	31.50
3030	Maximum	G		160	.200		40.50	9.15		49.65	59
3100	Lean-to skyroof, long span, double, minimum	G		197	.162		27	7.40		34.40	41.50
3150	Maximum	G		101	.317		54.50	14.45		68.95	82
3300	Single, minimum			321	.100		21	4.55		25.55	30
3350	Maximum			160	.200		34	9.15		43.15	51.50

08 51 Metal Windows

08 51 13 – Aluminum Windows

08 51 13.10 Aluminum Sash

0010	ALUMINUM SASH										
0020	Stock, grade C, glaze & trim not incl., casement		2 Sswk	200	.080	S.F.	38.50	4.09		42.59	49.50
0050	Double hung			200	.080		39	4.09		43.09	50
0100	Fixed casement			200	.080		17.25	4.09		21.34	26
0150	Picture window			200	.080		18.30	4.09		22.39	27
0200	Projected window			200	.080		35	4.09		39.09	45.50
0250	Single hung			200	.080		16.30	4.09		20.39	25
0300	Sliding			200	.080		21	4.09		25.09	30.50
1000	Mullions for above, tubular			240	.067	L.F.	6.10	3.41		9.51	12.70
2000	Custom aluminum sash, grade HC, glazing not included			140	.114	S.F.	39.50	5.85		45.35	53.50

08 51 13.20 Aluminum Windows

0010	ALUMINUM WINDOWS, incl. frame and glazing, commercial grade										
1000	Stock units, casement, 3'-1" x 3'-2" opening		2 Sswk	10	1.600	Eq.	370	82		452	550
1050	Add for storms						119			119	131
1600	Projected, with screen, 3'-1" x 3'-2" opening		2 Sswk	10	1.600		350	82		432	530
1700	Add for storms						116			116	128
2000	4'-5" x 5'-3" opening		2 Sswk	8	2		395	102		497	615
2100	Add for storms						124			124	136
2500	Enamel finish windows, 3'-1" x 3'-2"		2 Sswk	10	1.600		355	82		437	535
2600	4'-5" x 5'-3"			8	2		400	102		502	620
3000	Single hung, 2' x 3' opening, enameled, standard glazed			10	1.600		205	82		287	370
3100	Insulating glass			10	1.600		249	82		331	420
3300	2'-8" x 6'-8" opening, standard glazed			8	2		360	102		462	580
3400	Insulating glass			8	2		465	102		567	695
3700	3'-4" x 5'-0" opening, standard glazed			9	1.778		296	91		387	485
3800	Insulating glass			9	1.778		330	91		421	520
3890	Awning type, 3' x 3' opening standard glass			14	1.143		420	58.50		478.50	565
3900	Insulating glass			14	1.143		445	58.50		503.50	595
3910	3' x 4' opening, standard glass			10	1.600		490	82		572	685
3920	Insulating glass			10	1.600		565	82		647	765
3930	3' x 5'-4" opening, standard glass			10	1.600		590	82		672	795
3940	Insulating glass			10	1.600		695	82		777	910
3950	4' x 5'-4" opening, standard glass			9	1.778		650	91		741	875
3960	Insulating glass			9	1.778		775	91		866	1,025
4000	Sliding aluminum, 3' x 2' opening, standard glazed			10	1.600		217	82		299	385
4100	Insulating glass			10	1.600		232	82		314	400
4300	5' x 3' opening, standard glazed			9	1.778		330	91		421	525
4400	Insulating glass			9	1.778		385	91		476	585
4600	8' x 4' opening, standard glazed			6	2.667		350	136		486	625
4700	Insulating glass			6	2.667		565	136		701	860
5000	9' x 5' opening, standard glazed			4	4		530	204		734	945

08 51 Metal Windows

08 51 13 – Aluminum Windows

08 51 13.20 Aluminum Windows		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5100	Insulating glass	2 Sswk	4	4	Eo.	850	204		1,054	1,300
5500	Sliding, with thermal barrier ond screen, 6' x 4', 2 track		8	2		725	102		827	975
5700	4 track		8	2		910	102		1,012	1,175
6000	For abave units with bronze finish, add					15%				
6200	For installation in concrete openings, add					8%				

08 51 23 – Steel Windows

08 51 23.10 Steel Sash

0010	STEEL SASH Custom units, glazing and trim not included	R085123-10								
0100	Casement, 100% vented	2 Sswk	200	.080	S.F.	65	4.09		69.09	78.50
0200	50% vented		200	.080		53.50	4.09		57.59	65.50
0300	Fixed		200	.080		28.50	4.09		32.59	38.50
1000	Projected, commercial, 40% vented		200	.080		51	4.09		55.09	63
1100	Intermediate, 50% vented		200	.080		58	4.09		62.09	71
1500	Industrial, horizontally pivoted		200	.080		53	4.09		57.09	65
1600	Fixed		200	.080		31	4.09		35.09	41
2000	Industrial security sosh, 50% vented		200	.080		57	4.09		61.09	70
2100	Fixed		200	.080		46.50	4.09		50.59	58.50
2500	Picture window		200	.080		30	4.09		34.09	40
3000	Double hung		200	.080		58.50	4.09		62.59	71
5000	Mullians for obove, open interior face		240	.067	L.F.	10.25	3.41		13.66	17.30
5100	With interior cover		240	.067	"	17.05	3.41		20.46	25

08 51 23.20 Steel Windows

0010	STEEL WINDOWS Stack, including frame, trim ond insul. glass									
0020	See Section 13 34 19.50									
1000	Custom units, double hung, 2'-8" x 4'-6" opening	R085123-10	2 Sswk	12	1.333	Ea.	705	68	773	900
1100	2'-4" x 3'-9" opening			12	1.333		585	68	653	760
1500	Commercial projected, 3'-9" x 5'-5" opening			10	1.600		1,225	82	1,307	1,500
1600	6'-9" x 4'-1" opening			7	2.286		1,625	117	1,742	1,975
2000	Intermediate projected, 2'-9" x 4'-1" opening			12	1.333		685	68	753	875
2100	4'-1" x 5'-5" opening			10	1.600		1,400	82	1,482	1,700

08 51 23.40 Basement Utility Windows

0010	BASEMENT UTILITY WINDOWS									
0015	1'-3" x 2'-8"		1 Corp	16	.500	Eo.	128	23	151	176
1100	1'-7" x 2'-8"		"	16	.500	"	140	23	163	190

08 51 66 – Metal Window Screens

08 51 66.10 Screens

0010	SCREENS									
0020	Far metal sash, aluminum or bronze mesh, flot screen	2 Sswk	1200	.013	S.F.	4.24	.68		4.92	5.85
0500	Wicket screen, inside window		1000	.016		6.55	.82		7.37	8.65
0800	Security screen, oluminum frame with stainless steel cloth		1200	.013		23.50	.68		24.18	27
0900	Steel grate, pointed, on steel frame		1600	.010		12.90	.51		13.41	15.10
1000	Screens for solar louvers		160	.100		24.50	5.10		29.60	35.50
4000	See Section 05 58 23.90									

08 52 Wood Windows

08 52 10 – Plain Wood Windows

08 52 10.20 Awning Window

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	AWNING WINDOW, Including frame, screens and grilles									
0100	34" x 22", insulated glass	1 Corp	10	.800	Ea.	270	36.50		306.50	355
0200	Low E glass		10	.800		271	36.50		307.50	355
0300	40" x 28", insulated glass		9	.889		315	41		356	410
0400	Low E Glass		9	.889		340	41		381	440
0500	48" x 36", insulated glass		8	1		465	46		511	585
0600	Low E glass		8	1		490	46		536	610
4000	Impact windows, minimum, odd					60%				
4010	Impact windows, maximum, odd					160%				

08 52 10.40 Casement Window

0010	CASEMENT WINDOW, including frame, screen and grilles									
0100	2'-0" x 3'-0" H, dbl. insulated glass	G	1 Corp	10	.800	Ea.	268	36.50	304.50	350
0150	Low E glass	G		10	.800		259	36.50	295.50	340
0200	2'-0" x 4'-6" high, double insulated glass	G		9	.889		360	41	401	460
0250	Low E glass	G		9	.889		370	41	411	470
0260	Casement 4'-2" x 4'-2" double insulated glass	G		11	.727		875	33.50	908.50	1,000
0270	4'-0" x 4'-0" Low E glass	G		11	.727		535	33.50	568.50	640
0290	6'-4" x 5'-7" Low E glass	G		9	.889		1,125	41	1,166	1,300
0300	2'-4" x 6'-0" high, double insulated glass	G		8	1		430	46	476	545
0350	Low E glass	G		8	1		475	46	521	595
0522	Vinyl clad, premium, double insulated glass, 2'-0" x 3'-0"	G		10	.800		271	36.50	307.50	355
0524	2'-0" x 4'-0"	G		9	.889		315	41	356	415
0525	2'-0" x 5'-0"	G		8	1		360	46	406	470
0528	2'-0" x 6'-0"	G		8	1		380	46	426	490
0600	3'-0" x 5'-0"	G		8	1		665	46	711	800
0700	4'-0" x 3'-0"	G		8	1		730	46	776	875
0710	4'-0" x 4'-0"	G		8	1		625	46	671	755
0720	4'-8" x 4'-0"	G		8	1		690	46	736	830
0730	4'-8" x 5'-0"	G		6	1.333		790	61	851	960
0740	4'-8" x 6'-0"	G		6	1.333		880	61	941	1,075
0750	6'-0" x 4'-0"	G		6	1.333		805	61	866	980
0800	6'-0" x 5'-0"	G		6	1.333		895	61	956	1,075
0900	5'-6" x 5'-6"	G	2 Corp	15	1.067		1,425	49	1,474	1,650
2000	Boy, cosement units, 8' x 5', w/screens, dbl. insul. gloss			2.50	6.400	Opng.	1,600	293	1,893	2,200
2100	Low E glass			2.50	6.400	"	1,675	293	1,968	2,300
8190	For installation, odd per leaf					Eo.		15%		
8200	For multiple leaf units, deduct for stationary sash									
8220	2' high					Eo.	23		23	25.50
8240	4'-6" high						26		26	28.50
8260	6' high						34.50		34.50	38
8300	Impact windows, minimum, odd						60%			
8310	Impact windows, maximum, odd						160%			

08 52 10.50 Double Hung

0010	DOUBLE HUNG, Including frame, screens and grilles	R085216-10								
0100	2'-0" x 3'-0" high, low E insul. gloss	G	1 Corp	10	.800	Ea.	210	36.50	246.50	288
0200	3'-0" x 4'-0" high, double insulated glass	G		9	.889		279	41	320	370
0300	4'-0" x 4'-6" high, low E insulated glass	G		8	1		320	46	366	425
8000	Impact windows, minimum, odd						60%			
8010	Impact windows, maximum, odd						160%			

08 52 10.55 Picture Window

0010	PICTURE WINDOW, Including frame and grilles									
0100	3'-6" x 4'-0" high, dbl. insulated glass		2 Corp	12	1.333	Ea.	420	61	481	560

08 52 Wood Windows

08 52 10 – Plain Wood Windows

08 52 10.55 Picture Window		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0150	Low E glass	2 Carp	12	1.333	Ea.	435	61		496	570
0200	4'-0" x 4'-6" high, double insulated glass		11	1.455		550	66.50		616.50	710
0250	Low E glass		11	1.455		530	66.50		596.50	690
0300	5'-0" x 4'-0" high, double insulated glass		11	1.455		580	66.50		646.50	745
0350	Low E glass		11	1.455		605	66.50		671.50	770
0400	6'-0" x 4'-6" high, double insulated glass		10	1.600		625	73.50		698.50	805
0450	Low E glass		10	1.600		635	73.50		708.50	815

08 52 10.65 Wood Sash

0010	WOOD SASH , Including glazing but not trim									
0050	Custom, 5'-0" x 4'-0", 1" dbl. glazed, 3/16" thick lites	2 Carp	3.20	5	Ea.	230	229		459	610
0100	1/4" thick lites		5	3.200		245	147		392	495
0200	1" thick, triple glazed		5	3.200		415	147		562	680
0300	7'-0" x 4'-6" high, 1" double glazed, 3/16" thick lites		4.30	3.721		420	171		591	725
0400	1/4" thick lites		4.30	3.721		475	171		646	785
0500	1" thick, triple glazed		4.30	3.721		540	171		711	860
0600	8'-6" x 5'-0" high, 1" double glazed, 3/16" thick lites		3.50	4.571		565	210		775	950
0700	1/4" thick lites		3.50	4.571		620	210		830	1,000
0800	1" thick, triple glazed		3.50	4.571		625	210		835	1,000
0900	Window frames only, based on perimeter length				L.F.	4.02			4.02	4.42
1200	Window sill, stack, per lineal foot					8.50			8.50	9.35
1250	Casing, stack					3.30			3.30	3.63

08 52 10.70 Sliding Windows

0010	SLIDING WINDOWS									
0100	3'-0" x 3'-0" high, double insulated		1 Carp	10	.800	Ea.	284	36.50	320.50	365
0120	Low E glass			10	.800		310	36.50	346.50	395
0200	4'-0" x 3'-6" high, double insulated			9	.889		355	41	396	455
0220	Low E glass			9	.889		360	41	401	465
0300	6'-0" x 5'-0" high, double insulated			8	1		490	46	536	605
0320	Low E glass			8	1		530	46	576	650

08 52 13 – Metal-Clad Wood Windows

08 52 13.10 Awning Windows, Metal-Clad

0010	AWNING WINDOWS, METAL-CLAD									
2000	Metal clad, awning deluxe, double insulated glass, 34" x 22"		1 Carp	9	.889	Ea.	247	41	288	335
2050	36" x 25"			9	.889		272	41	313	360
2100	40" x 22"			9	.889		291	41	332	385
2150	40" x 30"			9	.889		340	41	381	440
2200	48" x 28"			8	1		345	46	391	450
2250	60" x 36"			8	1		370	46	416	480

08 52 13.20 Casement Windows, Metal-Clad

0010	CASEMENT WINDOWS, METAL-CLAD									
0100	Metal clad, deluxe, dbl. insul. glass, 2'-0" x 3'-0" high		1 Carp	10	.800	Ea.	279	36.50	315.50	360
0120	2'-0" x 4'-0" high			9	.889		315	41	356	410
0130	2'-0" x 5'-0" high			8	1		325	46	371	430
0140	2'-0" x 6'-0" high			8	1		365	46	411	470
0300	Metal clad, casement, bldrs mdl, 6'-0" x 4'-0", dbl. insltd gls, 3 panels		2 Carp	10	1.600		1,200	73.50	1,273.50	1,450
0310	9'-0" x 4'-0", 4 panels			8	2		1,550	91.50	1,641.50	1,850
0320	10'-0" x 5'-0", 5 panels			7	2.286		2,100	105	2,205	2,475
0330	12'-0" x 6'-0", 6 panels			6	2.667		2,700	122	2,822	3,150

08 52 13.30 Double-Hung Windows, Metal-clad

0010	DOUBLE-HUNG WINDOWS, METAL-CLAD									
0100	Metal clad, deluxe, dbl. insul. glass, 2'-6" x 3'-0" high		1 Carp	10	.800	Ea.	272	36.50	308.50	355

08 52 Wood Windows

08 52 13 – Metal-Clad Wood Windows

08 52 13.30 Double-Hung Windows, Metal-clad				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0120	3'-0" x 3'-6" high	G	1 Corp	10	.800	Ea.		315	36.50		351.50	400
0140	3'-0" x 4'-0" high	G		9	.889			325	41		366	425
0160	3'-0" x 4'-6" high	G		9	.889			345	41		386	445
0180	3'-0" x 5'-0" high	G		8	1			370	46		416	480
0200	3'-6" x 6'-0" high	G		8	1			450	46		496	565

08 52 13.35 Picture and Sliding Windows Metal-Clad

0010 PICTURE AND SLIDING WINDOWS METAL-CLAD												
2000	Metal clad, dlx picture, dbl. insul. glass, 4'-0" x 4'-0" high		2 Corp	12	1.333	Ea.		375	61		436	505
2100	4'-0" x 6'-0" high			11	1.455			545	66.50		611.50	705
2200	5'-0" x 6'-0" high			10	1.600			610	73.50		683.50	785
2300	6'-0" x 6'-0" high			10	1.600			695	73.50		768.50	880
2400	Metal clad, dlx sliding, double insulated glass, 3'-0" x 3'-0" high	G	1 Corp	10	.800			330	36.50		366.50	415
2420	4'-0" x 3'-6" high	G		9	.889			400	41		441	505
2440	5'-0" x 4'-0" high	G		9	.889			480	41		521	590
2460	6'-0" x 5'-0" high	G		8	1			725	46		771	865

08 52 13.40 Bow and Bay Windows, Metal-Clad

0010 BOW AND BAY WINDOWS, METAL-CLAD												
0100	Metal clad, deluxe, dbl. insul. glass, 8'-0" x 5'-0" high, 4 panels		2 Corp	10	1.600	Ea.		1,675	73.50		1,748.50	1,950
0120	10'-0" x 5'-0" high, 5 panels			8	2			1,800	91.50		1,891.50	2,125
0140	10'-0" x 6'-0" high, 5 panels			7	2.286			2,100	105		2,205	2,475
0160	12'-0" x 6'-0" high, 6 panels			6	2.667			2,925	122		3,047	3,425
0400	Double hung, bldrs. model, bay, 8' x 4' high, dbl. insulated glass			10	1.600			1,325	73.50		1,398.50	1,575
0440	Low E glass			10	1.600			1,425	73.50		1,498.50	1,700
0460	9'-0" x 5'-0" high, double insulated glass			6	2.667			1,425	122		1,547	1,775
0480	Low E glass			6	2.667			1,500	122		1,622	1,850
0500	Metal clad, deluxe, dbl. insul. glass, 7'-0" x 4'-0" high			10	1.600			1,275	73.50		1,348.50	1,525
0520	8'-0" x 4'-0" high			8	2			1,300	91.50		1,391.50	1,600
0540	8'-0" x 5'-0" high			7	2.286			1,350	105		1,455	1,650
0560	9'-0" x 5'-0" high			6	2.667			1,450	122		1,572	1,775

08 52 16 – Plastic-Clad Wood Windows

08 52 16.10 Bow Window

0010 BOW WINDOW Including frames, screens, and grilles												
0020	End panels operable											
1000	Bow type, casement, wood, bldrs. mdl., 8' x 5' dbl. insltd glass, 4 panel		2 Corp	10	1.600	Ea.		1,500	73.50		1,573.50	1,775
1050	Low E glass			10	1.600			1,325	73.50		1,398.50	1,575
1100	10'-0" x 5'-0", double insulated glass, 6 panels			6	2.667			1,350	122		1,472	1,700
1200	Low E glass, 6 panels			6	2.667			1,450	122		1,572	1,800
1300	Vinyl clad, bldrs. model, double insulated glass, 6'-0" x 4'-0", 3 panel			10	1.600			1,025	73.50		1,098.50	1,250
1340	9'-0" x 4'-0", 4 panel			8	2			1,350	91.50		1,441.50	1,650
1380	10'-0" x 6'-0", 5 panels			7	2.286			2,250	105		2,355	2,625
1420	12'-0" x 6'-0", 6 panels			6	2.667			2,925	122		3,047	3,425
2000	Bay window, 8' x 5', dbl. insul glass			10	1.600			1,875	73.50		1,948.50	2,200
2050	Low E glass			10	1.600			2,275	73.50		2,348.50	2,625
2100	12'-0" x 6'-0", double insulated glass, 6 panels			6	2.667			2,350	122		2,472	2,775
2200	Low E glass			6	2.667			2,375	122		2,497	2,825
2280	6'-0" x 4'-0"			11	1.455			1,250	66.50		1,316.50	1,475
2300	Vinyl clad, premium, double insulated glass, 8'-0" x 5'-0"			10	1.600			1,750	73.50		1,823.50	2,050
2340	10'-0" x 5'-0"			8	2			2,300	91.50		2,391.50	2,675
2380	10'-0" x 6'-0"			7	2.286			2,625	105		2,730	3,025
2420	12'-0" x 6'-0"			6	2.667			3,200	122		3,322	3,725
3300	Vinyl clad, premium, double insulated glass, 7'-0" x 4'-6"			10	1.600			1,375	73.50		1,448.50	1,625
3340	8'-0" x 4'-6"			8	2			1,400	91.50		1,491.50	1,675

08 52 Wood Windows

08 52 16 – Plastic-Clad Wood Windows

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
08 52 16.10 Bow Window		2 Carp	7	2.286	Ea.	1,450	105		1,555	1,750
3380	8'-0" x 5'-0"									
3420	9'-0" x 5'-0"	▼	6	2.667	▼	1,500	122		1,622	1,850

08 52 16.15 Awning Window Vinyl-Clad

0010	AWNING WINDOW VINYL-CLAD Including frames, screens, and grilles									
0240	Vinyl clad, 34" x 22"	1 Carp	10	.800	Ea.	264	36.50		300.50	345
0280	36" x 28"		9	.889		305	41		346	400
0300	36" x 36"		9	.889		340	41		381	440
0340	40" x 22"		10	.800		288	36.50		324.50	370
0360	48" x 28"		8	1		370	46		416	475
0380	60" x 36"	▼	8	1	▼	500	46		546	620

08 52 16.30 Palladian Windows

0010	PALLADIAN WINDOWS									
0020	Vinyl clad, double insulated glass, including frame and grilles									
0040	3'-2" x 2'-6" high	2 Carp	11	1.455	Ea.	1,250	66.50		1,316.50	1,475
0060	3'-2" x 4'-10"		11	1.455		1,750	66.50		1,816.50	2,000
0080	3'-2" x 6'-4"		10	1.600		1,700	73.50		1,773.50	2,000
0100	4'-0" x 4'-0"	▼	10	1.600		1,525	73.50		1,598.50	1,800
0120	4'-0" x 5'-4"	3 Carp	10	2.400		1,875	110		1,985	2,225
0140	4'-0" x 6'-0"		9	2.667		1,950	122		2,072	2,350
0160	4'-0" x 7'-4"		9	2.667		2,125	122		2,247	2,525
0180	5'-5" x 4'-10"		9	2.667		2,275	122		2,397	2,700
0200	5'-5" x 6'-10"		9	2.667		2,575	122		2,697	3,050
0220	5'-5" x 7'-9"		9	2.667		2,800	122		2,922	3,275
0240	6'-0" x 7'-11"		8	3		3,475	138		3,613	4,025
0260	8'-0" x 6'-0"	▼	8	3	▼	3,075	138		3,213	3,575

08 52 16.35 Double-Hung Window

0010	DOUBLE-HUNG WINDOW Including frames, screens, and grilles									
0300	Vinyl clad, premium, double insulated glass, 2'-6" x 3'-0"		1 Carp	10	.800	Ea.	310	36.50	346.50	395
0305	2'-6" x 4'-0"			10	.800		360	36.50	396.50	450
0400	3'-0" x 3'-6"			10	.800		335	36.50	371.50	425
0500	3'-0" x 4'-0"			9	.889		395	41	436	500
0600	3'-0" x 4'-6"			9	.889		410	41	451	515
0700	3'-0" x 5'-0"			8	1		445	46	491	555
0790	3'-4" x 5'-0"			8	1		455	46	501	570
0800	3'-6" x 6'-0"			8	1		490	46	536	610
0820	4'-0" x 5'-0"			7	1.143		560	52.50	612.50	695
0830	4'-0" x 6'-0"		▼	7	1.143		700	52.50	752.50	845

08 52 16.40 Transom Windows

0010	TRANSOM WINDOWS									
0050	Vinyl clad, premium, double insulated glass, 32" x 8"		1 Carp	16	.500	Ea.	188	23	211	242
0100	36" x 8"			16	.500		199	23	222	255
0110	36" x 12"			16	.500		212	23	235	269
0200	44" x 48"		▼	12	.667		580	30.50	610.50	685
1000	Vinyl clad, premium, dbl. insul. glass, 4'-0" x 4'-0"		2 Carp	12	1.333		495	61	556	640
1100	4'-0" x 6'-0"			11	1.455		935	66.50	1,001.50	1,125
1200	5'-0" x 6'-0"			10	1.600		1,050	73.50	1,123.50	1,275
1300	6'-0" x 6'-0"			10	1.600		1,050	73.50	1,123.50	1,275

08 52 16.70 Vinyl Clad, Premium, Dbl. Insulated Glass

0010	VINYL CLAD, PREMIUM, DBL. INSULATED GLASS									
1000	Sliding, 3'-0" x 3'-0"		1 Carp	10	.800	Ea.	605	36.50	641.50	720
1050	4'-0" x 3'-6"			9	.889		685	41	726	820

08 52 Wood Windows

08 52 16 – Plastic-Clad Wood Windows

08 52 16.70 Vinyl Clad, Premium, Dbl. Insulated Glass		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1100	5'-0" x 4'-0"	G 1 Carp	9	.889	Ea.	900	41		941	1,050
1150	6'-0" x 5'-0"	G ↓	8	1	↓	1,125	46		1,171	1,325

08 52 50 – Window Accessories

08 52 50.10 Window Grille or Muntin

0010	WINDOW GRILLE OR MUNTIN , snap in type									
0020	Standard pattern interior grilles									
2000	Wood, awning window, glass size 28" x 16" high	1 Carp	30	.267	Ea.	28	12.25		40.25	50
2060	44" x 24" high		32	.250		40	11.45		51.45	61.50
2100	Casement, glass size, 20" x 36" high		30	.267		32	12.25		44.25	54
2180	20" x 56" high		32	.250	↓	43	11.45		54.45	65
2200	Double hung, glass size, 16" x 24" high		24	.333	Set	51	15.30		66.30	80
2280	32" x 32" high		34	.235	"	131	10.80		141.80	161
2500	Picture, glass size, 48" x 48" high		30	.267	Ea.	120	12.25		132.25	151
2580	60" x 68" high		28	.286	"	183	13.10		196.10	222
2600	Sliding, glass size, 14" x 36" high		24	.333	Set	35.50	15.30		50.80	62.50
2680	36" x 36" high		22	.364	"	43.50	16.65		60.15	73

08 52 66 – Wood Window Screens

08 52 66.10 Wood Screens

0010	WOOD SCREENS									
0020	Over 3 S.F., 3/4" frames	2 Carp	375	.043	S.F.	4.89	1.96		6.85	8.40
0100	1-1/8" frames	"	375	.043	"	8.15	1.96		10.11	12

08 52 69 – Wood Storm Windows

08 52 69.10 Storm Windows

0010	STORM WINDOWS , aluminum residential									
0300	Basement, mill finish, incl. fiberglass screen									
0320	1'-10" x 1'-0" high	G 2 Carp	30	.533	Ea.	35	24.50		59.50	76
0340	2'-9" x 1'-6" high	G	30	.533		38	24.50		62.50	79.50
0360	3'-4" x 2'-0" high	G ↓	30	.533	↓	44	24.50		68.50	86
1600	Double-hung, combination, storm & screen									
2000	Clear anodic coating, 2'-0" x 3'-5" high	G 2 Carp	30	.533	Ea.	86	24.50		110.50	132
2020	2'-6" x 5'-0" high	G	28	.571		114	26		140	166
2040	4'-0" x 6'-0" high	G	25	.640		126	29.50		155.50	185
2400	White painted, 2'-0" x 3'-5" high	G	30	.533		85	24.50		109.50	131
2420	2'-6" x 5'-0" high	G	28	.571		92	26		118	142
2440	4'-0" x 6'-0" high	G	25	.640		100	29.50		129.50	156
2600	Mill finish, 2'-0" x 3'-5" high	G	30	.533		77	24.50		101.50	122
2620	2'-6" x 5'-0" high	G	28	.571		86	26		112	135
2640	4'-0" x 6'-8" high	G ↓	25	.640	↓	100	29.50		129.50	156

08 53 Plastic Windows

08 53 13 – Vinyl Windows

08 53 13.20 Vinyl Single Hung Windows

0010	VINYL SINGLE HUNG WINDOWS , insulated glass									
0100	Grids, low E, J fin, ext. jambs, 21" x 53"	G 2 Carp	18	.889	Ea.	198	41		239	281
0110	21" x 57"	G	17	.941		200	43		243	287
0120	21" x 65"	G	16	1		205	46		251	297
0130	25" x 41"	G	20	.800		190	36.50		226.50	266
0140	25" x 49"	G	18	.889		200	41		241	283
0150	25" x 57"	G ↓	17	.941	↓	205	43		248	293

08 53 Plastic Windows

08 53 13 – Vinyl Windows

08 53 13.20 Vinyl Single Hung Windows				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0160	25" x 65"	G	2 Carp	16	1	Ea.		240	46		286	335
0170	29" x 41"	G		18	.889			195	41		236	278
0180	29" x 53"	G		18	.889			205	41		246	289
0190	29" x 57"	G		17	.941			210	43		253	298
0200	29" x 65"	G		16	1			215	46		261	310
0210	33" x 41"	G		20	.800			200	36.50		236.50	277
0220	33" x 53"	G		18	.889			215	41		256	300
0230	33" x 57"	G		17	.941			215	43		258	305
0240	33" x 65"	G		16	1			220	46		266	315
0250	37" x 41"	G		20	.800			225	36.50		261.50	305
0260	37" x 53"	G		18	.889			235	41		276	320
0270	37" x 57"	G		17	.941			240	43		283	330
0280	37" x 65"	G		16	1			256	46		302	355
08 53 13.30 Vinyl Double Hung Windows												
0010	VINYL DOUBLE HUNG WINDOWS, insulated glass											
0100	Grids, low E, J fin, ext. jambs, 21" x 53"	G	2 Carp	18	.889	Ea.		215	41		256	300
0102	21" x 37"	G		18	.889			200	41		241	283
0104	21" x 41"	G		18	.889			205	41		246	289
0106	21" x 49"	G		18	.889			221	41		262	305
0110	21" x 57"	G		17	.941			222	43		265	310
0120	21" x 65"	G		16	1			230	46		276	325
0128	25" x 37"	G		20	.800			210	36.50		246.50	288
0130	25" x 41"	G		20	.800			215	36.50		251.50	294
0140	25" x 49"	G		18	.889			220	41		261	305
0145	25" x 53"	G		18	.889			225	41		266	310
0150	25" x 57"	G		17	.941			225	43		268	315
0160	25" x 65"	G		16	1			235	46		281	330
0162	25" x 69"	G		16	1			242	46		288	335
0164	25" x 77"	G		16	1			260	46		306	355
0168	29" x 37"	G		18	.889			215	41		256	300
0170	29" x 41"	G		18	.889			218	41		259	305
0172	29" x 49"	G		18	.889			225	41		266	310
0180	29" x 53"	G		18	.889			230	41		271	315
0190	29" x 57"	G		17	.941			232	43		275	320
0200	29" x 65"	G		16	1			240	46		286	335
0202	29" x 69"	G		16	1			247	46		293	345
0205	29" x 77"	G		16	1			267	46		313	365
0208	33" x 37"	G		20	.800			220	36.50		256.50	299
0210	33" x 41"	G		20	.800			222	36.50		258.50	300
0215	33" x 49"	G		20	.800			230	36.50		266.50	310
0220	33" x 53"	G		18	.889			235	41		276	320
0230	33" x 57"	G		17	.941			238	43		281	330
0240	33" x 65"	G		16	1			242	46		288	335
0242	33" x 69"	G		16	1			257	46		303	355
0246	33" x 77"	G		16	1			263	46		309	360
0250	37" x 41"	G		20	.800			242	36.50		278.50	325
0255	37" x 49"	G		20	.800			250	36.50		286.50	330
0260	37" x 53"	G		18	.889			257	41		298	345
0270	37" x 57"	G		17	.941			262	43		305	355
0280	37" x 65"	G		16	1			280	46		326	380
0282	37" x 69"	G		16	1			287	46		333	385
0286	37" x 77"	G		16	1			295	46		341	395

08 53 Plastic Windows

08 53 13 – Vinyl Windows

08 53 13.30 Vinyl Double Hung Windows

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0300	Solid vinyl, average quality, double insulated glass, 2'-0" x 3'-0"	G	1 Carp	10	.800	Ea.	291	36.50		327.50	375
0310	3'-0" x 4'-0"	G		9	.889		205	41		246	288
0320	4'-0" x 4'-6"	G		8	1		335	46		381	435
0330	Premium, double insulated glass, 2'-6" x 3'-0"	G		10	.800		260	36.50		296.50	340
0340	3'-0" x 3'-6"	G		9	.889		283	41		324	375
0350	3'-0" x 4'-0"	G		9	.889		310	41		351	405
0360	3'-0" x 4'-6"	G		9	.889		320	41		361	415
0370	3'-0" x 5'-0"	G		8	1		340	46		386	440
0380	3'-6" x 6'-0"	G		8	1		360	46		406	470

08 53 13.40 Vinyl Casement Windows

0010	VINYL CASEMENT WINDOWS, insulated glass										
0015	Grids, low E, J fin, extension jambs, screens										
0100	One lite, 21" x 41"	G	2 Carp	20	.800	Ea.	271	36.50		307.50	355
0110	21" x 47"	G		20	.800		294	36.50		330.50	380
0120	21" x 53"	G		20	.800		315	36.50		351.50	405
0128	24" x 35"	G		19	.842		263	38.50		301.50	350
0130	24" x 41"	G		19	.842		283	38.50		321.50	370
0140	24" x 47"	G		19	.842		305	38.50		343.50	395
0150	24" x 53"	G		19	.842		325	38.50		363.50	420
0158	28" x 35"	G		19	.842		278	38.50		316.50	365
0160	28" x 41"	G		19	.842		298	38.50		336.50	390
0170	28" x 47"	G		19	.842		320	38.50		358.50	410
0180	28" x 53"	G		19	.842		350	38.50		388.50	445
0184	28" x 59"	G		19	.842		350	38.50		388.50	445
0188	Two lites, 33" x 35"	G		18	.889		435	41		476	545
0190	33" x 41"	G		18	.889		460	41		501	570
0200	33" x 47"	G		18	.889		495	41		536	610
0210	33" x 53"	G		18	.889		525	41		566	645
0212	33" x 59"	G		18	.889		555	41		596	675
0215	33" x 72"	G		18	.889		570	41		611	695
0220	41" x 41"	G		18	.889		455	41		496	565
0230	41" x 47"	G		18	.889		530	41		571	650
0240	41" x 53"	G		17	.941		565	43		608	685
0242	41" x 59"	G		17	.941		590	43		633	715
0246	41" x 72"	G		17	.941		615	43		658	745
0250	47" x 41"	G		17	.941		505	43		548	620
0260	47" x 47"	G		17	.941		535	43		578	655
0270	47" x 53"	G		17	.941		565	43		608	685
0272	47" x 59"	G		17	.941		615	43		658	745
0280	56" x 41"	G		15	1.067		540	49		589	670
0290	56" x 47"	G		15	1.067		565	49		614	695
0300	56" x 53"	G		15	1.067		615	49		664	750
0302	56" x 59"	G		15	1.067		640	49		689	780
0310	56" x 72"	G		15	1.067		690	49		739	835
0340	Solid vinyl, premium, double insulated glass, 2'-0" x 3'-0" high	G	1 Carp	10	.800		263	36.50		299.50	345
0360	2'-0" x 4'-0" high	G		9	.889		293	41		334	385
0380	2'-0" x 5'-0" high	G		8	1		325	46		371	425

08 53 13.50 Vinyl Picture Windows

0010	VINYL PICTURE WINDOWS, insulated glass										
0100	Grids, low E, J fin, ext. jambs, 33" x 47"		2 Carp	12	1.333	Ea.	250	61		311	370
0110	35" x 71"			12	1.333		335	61		396	465
0120	41" x 47"			12	1.333		270	61		331	390

08 53 Plastic Windows

08 53 13 – Vinyl Windows

08 53 13.50 Vinyl Picture Windows		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0130	41" x 71"	2 Carp	12	1.333	Ea.	350	61		411	480
0140	47" x 47"		12	1.333		305	61		366	430
0150	47" x 71"		11	1.455		380	66.50		446.50	525
0160	53" x 47"		11	1.455		330	66.50		396.50	470
0170	53" x 71"		11	1.455		345	66.50		411.50	485
0180	59" x 47"		11	1.455		370	66.50		436.50	510
0190	59" x 71"		11	1.455		380	66.50		446.50	525
0200	71" x 47"		10	1.600		390	73.50		463.50	545
0210	71" x 71"	▼	10	1.600	▼	405	73.50		478.50	560

08 54 Composite Windows

08 54 13 – Fiberglass Windows

08 54 13.10 Fiberglass Single Hung Windows

0010	FIBERGLASS SINGLE HUNG WINDOWS									
0100	Grids, low E, 18" x 24"	G	2 Carp	18	.889	Ea.	335	41	376	435
0110	18" x 40"	G		17	.941		340	43	383	440
0130	24" x 40"	G		20	.800		360	36.50	396.50	450
0230	36" x 36"	G		17	.941		370	43	413	470
0250	36" x 48"	G		20	.800		405	36.50	441.50	500
0260	36" x 60"	G		18	.889		445	41	486	555
0280	36" x 72"	G		16	1		470	46	516	585
0290	48" x 40"	G		16	1		470	46	516	585

08 56 Special Function Windows

08 56 63 – Detention Windows

08 56 63.13 Visitor Cubicle Windows

0010	VISITOR CUBICLE WINDOWS									
4000	Visitar cubicle, visian panel, na intercom	E-4	2	16	Ea.	3,200	825	71	4,096	5,050

08 62 Unit Skylights

08 62 13 – Domed Unit Skylights

08 62 13.20 Skylights

0010	SKYLIGHTS, flush ar curb mounted									
2120	Ventilating insulated plexiglass dome with									
2130	curb mounting, 36" x 36"	G	G-3	12	2.667	Ea.	480	122	602	715
2150	52" x 52"	G		12	2.667		660	122	782	910
2160	28" x 52"	G		10	3.200		485	146	631	760
2170	36" x 52"	G	▼	10	3.200		540	146	686	820
2180	Far electric apening system, add	G				▼	310		310	340
2300	Insulated safety glass with aluminum frame	G	G-3	160	.200	S.F.	92	9.15	101.15	115

08 71 Door Hardware

08 71 13 – Automatic Door Operators

08 71 13.10 Automatic Openers Commercial

		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	AUTOMATIC OPENERS COMMERCIAL									
0020	Pneumatic, incl opener, motion sens, control box, tubing, compressor									
0050	For single swing door, per opening	2 Skwk	.80	20	Eo.	4,550	945		5,495	6,475
0100	Poir, per opening		.50	32	Opng.	7,375	1,525		8,900	10,500
1000	For single sliding door, per opening		.60	26.667		4,975	1,250		6,225	7,425
1300	Bi-porting poir	▼	.50	32	▼	7,475	1,525		9,000	10,600
1420	Electronic door opener incl motion sens, 12 V control box, motor									
1450	For single swing door, per opening	2 Skwk	.80	20	Opng.	3,550	945		4,495	5,400
1500	Poir, per opening		.50	32		6,500	1,525		8,025	9,500
1600	For single sliding door, per opening		.60	26.667		4,300	1,250		5,550	6,675
1700	Bi-porting poir		.50	32		5,250	1,525		6,775	8,125
1750	Handicap octuator buttons, 2, including 12 V DC wiring, odd	1 Corp	1.50	5.333	Pr.	470	245		715	890

08 71 13.20 Automatic Openers Industrial

0010	AUTOMATIC OPENERS INDUSTRIAL									
0015	Sliding doors up to 6' wide	2 Skwk	.60	26.667	Opng.	5,900	1,250		7,150	8,450
0200	To 12' wide	"	.40	40	"	7,075	1,900		8,975	10,700
0400	Over 12' wide, add per L.F. of excess				L.F.	800			800	880
1000	Swing doors, to 5' wide	2 Skwk	.80	20	Eo.	3,500	945		4,445	5,325
1860	Add for controls, wall pushbutton, 3 button		4	4		240	189		429	555
1870	Control pull cord	▼	4.30	3.721	▼	195	176		371	490

08 71 20 – Hardware

08 71 20.10 Bolts, Flush

0010	BOLTS, FLUSH									
0020	Stondord, concealed	1 Corp	7	1.143	Eo.	23.50	52.50		76	107
0800	Automatic fire exit	"	5	1.600		260	73.50		333.50	400
1600	For electric release, odd	1 Elec	3	2.667		127	142		269	355
3000	Borrel, brass, 2" long	1 Corp	40	.200		6.80	9.15		15.95	21.50
3020	4" long		40	.200		12.25	9.15		21.40	27.50
3060	6" long	▼	40	.200	▼	25	9.15		34.15	41.50

08 71 20.15 Hardware

0010	HARDWARE									
0020	Average percentage for hardware, total job cost									
0025	Minimum				Job					2%
0050	Maximum									5%
0500	Total hardware for building, overage distribution				▼	85%	15%			
1000	Door hardware, oportment, interior	1 Corp	4	2	Door	450	91.50		541.50	640
1300	Average, door hardware, motel/hotel interior, with access cord		4	2		580	91.50		671.50	780
1500	Hospital bedroom, minimum		4	2		620	91.50		711.50	820
2000	Maximum		3	2.667		725	122		847	985
2100	Pocket door		6	1.333	Eo.	100	61		161	205
2250	School, single exterior, incl. lever, incl. ponc device		3	2.667	Door	1,275	122		1,397	1,600
2500	Single interior, regular use, lever included		3	2.667		615	122		737	870
2550	Average, door hdwe., school, classroom, ANSI F84, lever hondl		3	2.667		845	122		967	1,125
2600	Average, door hdwe., school, classroom, ANSI F88, incl. lever		3	2.667		905	122		1,027	1,175
2850	Stoirway, single interior		3	2.667	▼	540	122		662	785
3100	Double exterior, with ponc device	▼	2	4	Pr.	2,375	183		2,558	2,875
6020	Add for fire olorm door holder, electro-mognetic	1 Elec	4	2	Eo.	102	107		209	272

08 71 20.20 Door Protectors

0010	DOOR PROTECTORS									
0020	1-3/4" x 3/4" U channel	2 Corp	80	.200	L.F.	37	9.15		46.15	54.50
0021	1-3/4" x 1-1/4" U channel	▼	80	.200	"	39	9.15		48.15	57

08 71 Door Hardware

08 71 20 – Hardware

08 71 20.20 Door Protectors

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1000	Tear drop, spring-stl, 8" high x 19" long	2 Corp	15	1.067	Ea.	98	49		147	184
1010	8" high x 32" long		15	1.067		121	49		170	209
1100	Tear drop, stainless stl., 8" high x 19" long		15	1.067		255	49		304	355
1200	8" high x 32" long		15	1.067		315	49		364	425

08 71 20.30 Door Closers

0010	DOOR CLOSERS Adjustable backcheck, multiple mounting									
0015	and rock and pinion									
0020	Stondord Regular Arm	1 Corp	6	1.333	Ea.	188	61		249	300
0040	Hold open arm		6	1.333		200	61		261	315
0100	Fusible link		6.50	1.231		162	56.50		218.50	265
0210	Light duty, regular arm		6	1.333		93.50	61		154.50	198
0220	Parallel arm		6	1.333		125	61		186	232
0230	Hold open arm		6	1.333		117	61		178	224
0240	Fusible link arm		6	1.333		148	61		209	258
0250	Medium duty, regular arm		6	1.333		117	61		178	224
0500	Surface mount regular arm		6.50	1.231		125	56.50		181.50	225
0550	Fusible link		6.50	1.231		131	56.50		187.50	231
1520	Overhead canceoled, all sizes, regular arm		5.50	1.455		200	66.50		266.50	325
1525	Canceoled arm		5	1.600		310	73.50		383.50	455
1530	Canceoled in door, all sizes, regular arm		5.50	1.455		320	66.50		386.50	455
1535	Canceoled arm		5	1.600		253	73.50		326.50	390
1560	Floor canceoled, all sizes, single acting		2.20	3.636		500	167		667	805
1565	Double acting		2.20	3.636		410	167		577	705
1610	Hold open arm		6	1.333		420	61		481	555
1620	Double acting, stondord arm		6	1.333		700	61		761	865
1630	Hold open arm		6	1.333		700	61		761	865
1640	Floor, center hung, single acting, bottom arm		6	1.333		410	61		471	545
1650	Double acting		6	1.333		465	61		526	605
1660	Offset hung, single acting, bottom arm		6	1.333		550	61		611	700
2000	Backcheck and adjustable power, hinge face mount									
5000	For cost aluminum cylinder, deduct				Ea.	35			35	38.50
5010	For delayed action add	1 Corp	6	1.333		34	61		95	132
5040	For delayed action, add					46			46	50.50
5080	For fusible link arm, add					35			35	38.50
5120	For shock absorbing arm, add					50			50	55
5160	For spring power adjustment, add					40			40	44
6000	Closer-holder, hinge face mount, all sizes, exposed arm	1 Corp	6.50	1.231		201	56.50		257.50	310
6500	Electro magnetic closer/holder									
6510	Single point, no detector	1 Corp	4	2	Ea.	470	91.50		561.50	655
6515	Including detector		4	2		665	91.50		756.50	875
6520	Multi-point, no detector		4	2		875	91.50		966.50	1,100
6524	Including detector		4	2		1,275	91.50		1,366.50	1,550
6550	Electric automatic operators									
6555	Operator	1 Corp	4	2	Ea.	1,975	91.50		2,066.50	2,325
6570	Wall plate actuator		4	2		217	91.50		308.50	380
7000	Electronic closer-holder, hinge facemount, canceoled arm		5	1.600		420	73.50		493.50	575
7400	With built-in detector		5	1.600		605	73.50		678.50	780
8000	Surface mounted, stond. duty, parallel arm, primed, traditional		6	1.333		207	61		268	325
8030	Light duty		6	1.333		137	61		198	245
8042	Extra duty parallel arm		6	1.333		125	61		186	232
8044	Hold open arm		6	1.333		190	61		251	305
8046	Positive stop arm		6	1.333		212	61		273	330

08 71 Door Hardware

08 71 20 – Hardware

08 71 20.30 Door Closers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8050	Heavy duty	1 Carp	6	1.333	Ea.	234	61		295	350
8052	Heavy duty, regular arm		6	1.333		215	61		276	330
8054	Tap jamb mount		6	1.333		215	61		276	330
8056	Extra duty parallel arm		6	1.333		215	61		276	330
8058	Hold open arm		6	1.333		261	61		322	380
8060	Positive stop arm		6	1.333		238	61		299	355
8062	Fusible link arm		6	1.333		257	61		318	380
8080	Universal heavy duty, regular arm		6	1.333		225	61		286	340
8084	Parallel arm		6	1.333		225	61		286	340
8088	Extra duty, parallel arm		6	1.333		257	61		318	380
8090	Hold open arm		6	1.333		265	61		326	385
8094	Positive stop arm		6	1.333		275	61		336	395
8100	Standard duty, parallel arm, modern		6	1.333		243	61		304	365
8150	Heavy duty		6	1.333		274	61		335	395

08 71 20.35 Panic Devices

0010 PANIC DEVICES										
0015	Far rim locks, single door exit only	1 Carp	6	1.333	Ea.	460	61		521	600
0020	Outside key and pull		5	1.600		570	73.50		643.50	745
0200	Bar and vertical rod, exit only		5	1.600		865	73.50		938.50	1,075
0210	Outside key and pull		4	2		940	91.50		1,031.50	1,175
0400	Bar and concealed rod		4	2		745	91.50		836.50	960
0600	Touch bar, exit only		6	1.333		555	61		616	705
0610	Outside key and pull		5	1.600		685	73.50		758.50	865
0700	Touch bar and vertical rod, exit only		5	1.600		845	73.50		918.50	1,050
0710	Outside key and pull		4	2		970	91.50		1,061.50	1,225
1000	Martise, bar, exit only		4	2		690	91.50		781.50	900
1600	Touch bar, exit only		4	2		740	91.50		831.50	955
2000	Narrow stile, rim mounted, bar, exit only		6	1.333		615	61		676	770
2010	Outside key and pull		5	1.600		890	73.50		963.50	1,100
2200	Bar and vertical rod, exit only		5	1.600		920	73.50		993.50	1,125
2210	Outside key and pull		4	2		920	91.50		1,011.50	1,150
2400	Bar and concealed rod, exit only		3	2.667		1,025	122		1,147	1,350
3000	Martise, bar, exit only		4	2		600	91.50		691.50	800
3600	Touch bar, exit only		4	2		790	91.50		881.50	1,000

08 71 20.40 Lockset

0010 LOCKSET, Standard duty										
0020	Non-keyed, passage, w/sect.trim	1 Carp	12	.667	Ea.	63.50	30.50		94	117
0100	Privacy		12	.667		75	30.50		105.50	130
0400	Keyed, single cylinder function		10	.800		108	36.50		144.50	175
0420	Hotel (see also Section 08 71 20.15)		8	1		205	46		251	297
0500	Lever handled, keyed, single cylinder function		10	.800		128	36.50		164.50	198
1000	Heavy duty with sectional trim, non-keyed, passages		12	.667		125	30.50		155.50	185
1100	Privacy		12	.667		155	30.50		185.50	218
1400	Keyed, single cylinder function		10	.800		185	36.50		221.50	261
1420	Hotel		8	1		450	46		496	565
1600	Communicating		10	.800		290	36.50		326.50	375
1690	Far re-core cylinder, add					50			50	55
1700	Residential, interior door, minimum	1 Carp	16	.500		30	23		53	68.50
1720	Maximum		8	1		120	46		166	203
1800	Exterior, minimum		14	.571		50	26		76	95.50
1810	Average		8	1		72.50	46		118.50	151
1820	Maximum		8	1		220	46		266	315

08 71 Door Hardware

08 71 20 – Hardware

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
08 71 20.40 Lockset							Labor	Equipment		
3800	Cipher lockset w/key pad (security item)	1 Carp	13	.615	Ea.	920	28		948	1,075
3900	Cipher lockset with dial for swinging doors (security item)		13	.615		1,800	28		1,828	2,050
3920	with dial for swinging doors & drill resistant plate (security item)		12	.667		2,200	30.50		2,230.50	2,475
3950	Cipher lockset with dial for safe/vault door (security item)	▼	12	.667	▼	1,500	30.50		1,530.50	1,700
3980	Keyless, pushbutton type									
4000	Residential/light commercial, deadbolt, standard	1 Carp	9	.889	Ea.	140	41		181	217
4010	Heavy duty		9	.889		230	41		271	315
4020	Industrial, heavy duty, with deadbolt		9	.889		355	41		396	455
4030	Key override		9	.889		390	41		431	495
4040	Lever activated handle		9	.889		415	41		456	520
4050	Key override		9	.889		430	41		471	535
4060	Double sided pushbutton type		8	1		755	46		801	900
4070	Key override	▼	8	1	▼	790	46		836	940

08 71 20.41 Dead Locks

0010	DEAD LOCKS									
0011	Mortise heavy duty outside key (security item)	1 Carp	9	.889	Ea.	200	41		241	283
0020	Double cylinder		9	.889		200	41		241	283
0100	Medium duty, outside key		10	.800		110	36.50		146.50	178
0110	Double cylinder		10	.800		120	36.50		156.50	189
1000	Tubular, standard duty, outside key		10	.800		45	36.50		81.50	106
1010	Double cylinder		10	.800		60	36.50		96.50	123
1200	Night latch, outside key	▼	10	.800	▼	45	36.50		81.50	106

08 71 20.42 Mortise Locksets

0010	MORTISE LOCKSETS, Comm., wrought knobs & full escutcheon trim									
0015	Assumes mortise is cut									
0020	Non-keyed, passage, minimum	1 Carp	9	.889	Ea.	149	41		190	227
0030	Maximum		8	1		405	46		451	515
0040	Privacy, minimum		9	.889		169	41		210	249
0050	Maximum		8	1		455	46		501	570
0100	Keyed, office/entrance/apartment, minimum		8	1		197	46		243	288
0110	Maximum		7	1.143		515	52.50		567.50	650
0120	Single cylinder, typical, minimum		8	1		189	46		235	279
0130	Maximum		7	1.143		495	52.50		547.50	625
0200	Hotel, minimum (see also Section 08 71 20.15)		7	1.143		189	52.50		241.50	289
0210	Maximum (see also Section 08 71 20.15)		6	1.333		505	61		566	655
0300	Communication, double cylinder, minimum		8	1		225	46		271	320
0310	Maximum		7	1.143		515	52.50		567.50	650
1000	Wrought knobs and sectional trim, non-keyed, passage, minimum		10	.800		130	36.50		166.50	200
1010	Maximum		9	.889		405	41		446	510
1040	Privacy, minimum		10	.800		145	36.50		181.50	217
1050	Maximum		9	.889		455	41		496	565
1100	Keyed, entrance, office/apartment, minimum		9	.889		220	41		261	305
1110	Maximum		8	1		515	46		561	640
1120	Single cylinder, typical, minimum		9	.889		225	41		266	310
1130	Maximum	▼	8	1	▼	495	46		541	615
2000	Cast knobs and full escutcheon trim									
2010	Non-keyed, passage, minimum	1 Carp	9	.889	Ea.	275	41		316	370
2020	Maximum		8	1		380	46		426	490
2040	Privacy, minimum		9	.889		320	41		361	415
2050	Maximum		8	1		440	46		486	555
2120	Keyed, single cylinder, typical, minimum		8	1		330	46		376	435
2130	Maximum	▼	7	1.143	▼	525	52.50		577.50	660

08 71 Door Hardware

08 71 20 – Hardware

08 71 20.42 Mortise Locksets

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
3000	Cost knob and sectional trim, non-keyed, passage, minimum	1 Corp	10	.800	Eq.	210	36.50		246.50	288
3010	Maximum		10	.800		380	36.50		416.50	475
3040	Privacy, minimum		10	.800		225	36.50		261.50	305
3050	Maximum		10	.800		440	36.50		476.50	540
3100	Keyed, office/entrance/apartment, minimum		9	.889		255	41		296	345
3110	Maximum		9	.889		580	41		621	700
3120	Single cylinder, typical, minimum		9	.889		260	41		301	350
3130	Maximum		9	.889		525	41		566	645
3190	For re-core cylinder, add					50			50	55

08 71 20.45 Peepholes

0010	PEEPHOLES									
2010	Peephole	1 Corp	32	.250	Eq.	15.80	11.45		27.25	35
2020	Peephole, wide view	"	32	.250	"	16.50	11.45		27.95	36

08 71 20.50 Door Stops

0010	DOOR STOPS									
0020	Holder & bumper, floor or wall	1 Corp	32	.250	Eq.	34.50	11.45		45.95	55
1300	Wall bumper, 4" diameter, with rubber pad, aluminum		32	.250		11.70	11.45		23.15	30.50
1600	Door bumper, floor type, aluminum		32	.250		8.10	11.45		19.55	26.50
1900	Plunger type, door mounted		32	.250		28	11.45		39.45	48

08 71 20.55 Push-Pull Plates

0010	PUSH-PULL PLATES									
0090	Push plate, 0.050 thick, 3" x 12", aluminum	1 Corp	12	.667	Eq.	6.25	30.50		36.75	54
0100	4" x 16"		12	.667		11.10	30.50		41.60	59.50
0110	6" x 16"		12	.667		8.50	30.50		39	56.50
0120	8" x 16"		12	.667		9.90	30.50		40.40	58
0200	Push plate, 0.050 thick, 3" x 12", brass		12	.667		14	30.50		44.50	62.50
0210	4" x 16"		12	.667		17.50	30.50		48	66.50
0220	6" x 16"		12	.667		27	30.50		57.50	76.50
0230	8" x 16"		12	.667		35	30.50		65.50	85.50
0250	Push plate, 0.050 thick, 3" x 12", satin brass		12	.667		14.25	30.50		44.75	62.50
0260	4" x 16"		12	.667		17.70	30.50		48.20	66.50
0270	6" x 16"		12	.667		27	30.50		57.50	76.50
0280	8" x 16"		12	.667		35	30.50		65.50	85.50
0490	Push plate, 0.050 thick, 3" x 12", bronze		12	.667		17	30.50		47.50	65.50
0500	4" x 16"		12	.667		25	30.50		55.50	74.50
0510	6" x 16"		12	.667		32	30.50		62.50	82
0520	8" x 16"		12	.667		38.50	30.50		69	89.50
0740	Push plate, 0.050 thick, 3" x 12", stainless steel		12	.667		12	30.50		42.50	60
0760	6" x 16"		12	.667		18.65	30.50		49.15	67.50
0780	8" x 16"		12	.667		23.50	30.50		54	73
0790	Push plate, 0.050 thick, 3" x 12", satin stainless steel		12	.667		7	30.50		37.50	54.50
0820	6" x 16"		12	.667		11.70	30.50		42.20	60
0830	8" x 16"		12	.667		9	30.50		39.50	57
0980	Pull plate, 0.050 thick, 3" x 12", aluminum		12	.667		25.50	30.50		56	75
1050	Pull plate, 0.050 thick, 3" x 12", brass		12	.667		39.50	30.50		70	90.50
1080	Pull plate, 0.050 thick, 3" x 12", bronze		12	.667		50	30.50		80.50	102
1180	Pull plate, 0.050 thick, 3" x 12", stainless steel		12	.667		45.50	30.50		76	97
1250	Pull plate, 0.050 thick, 3" x 12", chrome		12	.667		44.50	30.50		75	96
1500	Pull handle and push bar, aluminum		11	.727		118	33.50		151.50	182
2000	Bronze		10	.800		159	36.50		195.50	232
3000	Push plate both sides, aluminum		14	.571		27	26		53	70
3500	Bronze		13	.615		61.50	28		89.50	111

08 71 Door Hardware

08 71 20 – Hardware

08 71 20.55 Push-Pull Plates

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
4000	Door pull, designer style, cast aluminum, minimum	1 Carp	12	.667	Ea.	88.50	30.50		119	145
5000	Maximum		8	1		370	46		416	475
6000	Cost bronze, minimum		12	.667		87	30.50		117.50	143
7000	Maximum		8	1		405	46		451	515
8000	Walnut, minimum		12	.667		70	30.50		100.50	124
9000	Maximum		8	1		380	46		426	490

08 71 20.60 Entrance Locks

0010	ENTRANCE LOCKS									
0015	Cylinder, grip handle deadlocking latch	1 Carp	9	.889	Ea.	175	41		216	256
0020	Deadbolt		8	1		175	46		221	264
0100	Push and pull plate, dead bolt		8	1		225	46		271	320
0900	For handicapped lever, add					150			150	165

08 71 20.65 Thresholds

0010	THRESHOLDS									
0011	Threshold 3' long saddles aluminum	1 Carp	48	.167	L.F.	8.15	7.65		15.80	21
0100	Aluminum, 8" wide, 1/2" thick		12	.667	Ea.	49	30.50		79.50	101
0500	Bronze		60	.133	L.F.	41.50	6.10		47.60	55
0600	Bronze, panic threshold, 5" wide, 1/2" thick		12	.667	Ea.	158	30.50		188.50	220
0700	Rubber, 1/2" thick, 5-1/2" wide		20	.400		40	18.35		58.35	72.50
0800	2-3/4" wide		20	.400		37.50	18.35		55.85	70
1950	ADA Compliant Thresholds									
2300	Threshold, aluminum 4" wide x 36" long	1 Carp	12	.667	Ea.	33	30.50		63.50	83.50
2310	4" wide x 48" long		12	.667		41	30.50		71.50	92
2360	6" wide x 36" long		12	.667		53	30.50		83.50	106
2370	6" wide x 48" long		12	.667		68	30.50		98.50	122

08 71 20.70 Floor Checks

0010	FLOOR CHECKS									
0020	For over 3' wide doors single acting	1 Carp	2.50	3.200	Ea.	745	147		892	1,050
0500	Double acting	"	2.50	3.200	"	860	147		1,007	1,175

08 71 20.75 Door Hardware Accessories

0010	DOOR HARDWARE ACCESSORIES									
0050	Door closing coordinator, 36" (for paired openings up to 56")	1 Carp	8	1	Ea.	98	46		144	179
0060	48" (for paired openings up to 84")		8	1		105	46		151	187
0070	56" (for paired openings up to 96")		8	1		116	46		162	198

08 71 20.80 Hasps

0010	HASPS, steel assembly									
0015	3"	1 Carp	26	.308	Ea.	4.90	14.10		19	27.50
0020	4-1/2"		13	.615		6.60	28		34.60	51
0040	6"		12.50	.640		8.70	29.50		38.20	55

08 71 20.90 Hinges

0010	HINGES	R087120-10								
0012	Full mortise, avg. freq., steel base, USP, 4-1/2" x 4-1/2"				Pr.	36			36	40
0100	5" x 5", USP					57.50			57.50	63
0200	6" x 6", USP					119			119	131
0400	Brass base, 4-1/2" x 4-1/2", US10					58.50			58.50	64.50
0500	5" x 5", US10					86			86	94.50
0600	6" x 6", US10					162			162	178
0800	Stainless steel base, 4-1/2" x 4-1/2", US32					74			74	81.50
0900	For non removable pin, odd (security item)				Ea.	4.88			4.88	5.35
0910	For floating pin, driven tips, add					3.30			3.30	3.63
0930	For hospital type tip on pin, odd					13.95			13.95	15.35

08 71 Door Hardware

08 71 20 – Hardware

08 71 20.90 Hinges

		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0940	For steeple type tip on pin, add				Ea.	18.95			18.95	21
0950	Full martise, high frequency, steel base, 3-1/2" x 3-1/2", US26D				Pr.	30			30	33
1000	4-1/2" x 4-1/2", USP					63			63	69
1100	5" x 5", USP					50			50	55
1200	6" x 6", USP					134			134	148
1400	Brass base, 3-1/2" x 3-1/2", US4					51			51	56
1430	4-1/2" x 4-1/2", US10					73.50			73.50	81
1500	5" x 5", US10					122			122	134
1600	6" x 6", US10					166			166	183
1800	Stainless steel base, 4-1/2" x 4-1/2", US32					103			103	114
1810	5" x 4-1/2", US32				▼	137			137	151
1930	For haspital type tip on pin, add				Ea.	13.15			13.15	14.45
1950	Full martise, low frequency, steel base, 3-1/2" x 3-1/2", US26D				Pr.	23			23	25.50
2000	4-1/2" x 4-1/2", USP					22			22	24.50
2100	5" x 5", USP					47.50			47.50	52
2200	6" x 6", USP					89			89	98
2300	4-1/2" x 4-1/2", US3					17.70			17.70	19.45
2310	5" x 5", US3					42.50			42.50	46.50
2400	Brass bass, 4-1/2" x 4-1/2", US10					53			53	58.50
2500	5" x 5", US10					76.50			76.50	84
2800	Stainless steel base, 4-1/2" x 4-1/2", US32				▼	74.50			74.50	82

08 71 20.91 Special Hinges

0010	SPECIAL HINGES									
0015	Paumelle, high frequency									
0020	Steel base, 6" x 4-1/2", US10				Pr.	145			145	160
0100	Brass base, 5" x 4-1/2", US10				Ea.	248			248	273
0200	Paumelle, average frequency, steel base, 4-1/2" x 3-1/2", US10				Pr.	98.50			98.50	108
0400	Olive knuckle, low frequency, brass base, 6" x 4-1/2", US10				Ea.	142			142	156
1000	Electric hinge with concealed conductor, average frequency									
1010	Steel base, 4-1/2" x 4-1/2", US26D				Pr.	310			310	340
1100	Bronze base, 4-1/2" x 4-1/2", US26D				"	320			320	350
1200	Electric hinge with concealed conductor, high frequency									
1210	Steel base, 4-1/2" x 4-1/2", US26D				Pr.	262			262	288
1600	Double weight, 800 lb., steel base, removable pin, 5" x 6", USP					310			310	340
1700	Steel base-welded pin, 5" x 6", USP					166			166	183
1800	Triple weight, 2000 lb., steel base, welded pin, 5" x 6", USP					400			400	440
2000	Pivot reinf., high frequency, steel base, 7-3/4" door plate, USP					149			149	164
2200	Bronze base, 7-3/4" door plate, US10				▼	232			232	255
3000	Swing clear, full martise, full or half surface, high frequency,									
3010	Steel base, 5" high, USP				Pr.	143			143	157
3200	Swing clear, full martise, average frequency									
3210	Steel base, 4-1/2" high, USP				Pr.	128			128	141
4000	Wide throw, average frequency, steel base, 4-1/2" x 6", USP					94.50			94.50	104
4200	High frequency, steel base, 4-1/2" x 6", USP				▼	112			112	124
4600	Spring hinge, single acting, 6" flange, steel				Ea.	50			50	55
4700	Brass					94.50			94.50	104
4900	Double acting, 6" flange, steel					80			80	88
4950	Brass					133			133	146
8000	Continuous hinges									
8010	Steel, piano, 2" x 72"	1 Corp	20	.400	Ea.	22	18.35		40.35	52.50
8020	Brass, piano, 1-1/16" x 30"		30	.267		8	12.25		20.25	27.50
8030	Acrylic, piano, 1-3/4" x 12"		40	.200	▼	15	9.15		24.15	30.50

08 71 Door Hardware

08 71 20 – Hardware

		Daily	Labor-				2014 Bare Costs			Total
08 71 20.91 Special Hinges		Crew	Output	Hours	Unit	Material	Labor	Equipment	Total	Incl O&P
9000	Continuous hinge, steel, full mortise, heavy duty, 96 inch	1 Carp	2	4	Ea.	460	183		643	790
08 71 20.95 Kick Plates										
0010	KICK PLATES									
0020	Stainless steel, .050, 16 ga., 8" x 28", US32	1 Carp	15	.533	Ea.	38	24.50		62.50	79.50
0030	8" x 30"		15	.533		41	24.50		65.50	82.50
0040	8" x 34"		15	.533		46	24.50		70.50	88
0050	10" x 28"		15	.533		76	24.50		100.50	121
0060	10" x 30"		15	.533		82	24.50		106.50	128
0070	10" x 34"		15	.533		92	24.50		116.50	139
0080	Map/Kick, 4" x 28"		15	.533		34	24.50		58.50	75
0090	4" x 30"		15	.533		36	24.50		60.50	77
0100	4" x 34"		15	.533		41	24.50		65.50	82.50
0110	6" x 28"		15	.533		43	24.50		67.50	85
0120	6" x 30"		15	.533		47	24.50		71.50	89
0130	6" x 34"		15	.533		53	24.50		77.50	96
0500	Bronze, .050", 8" x 28"		15	.533		66.50	24.50		91	111
0510	8" x 30"		15	.533		65	24.50		89.50	109
0520	8" x 34"		15	.533		73	24.50		97.50	118
0530	10" x 28"		15	.533		75	24.50		99.50	120
0540	10" x 30"		15	.533		80	24.50		104.50	126
0550	10" x 34"		15	.533		91	24.50		115.50	138
0560	Map/Kick, 4" x 28"		15	.533		33	24.50		57.50	74
0570	4" x 30"		15	.533		36	24.50		60.50	77
0580	4" x 34"		15	.533		37	24.50		61.50	78
0590	6" x 28"		15	.533		46	24.50		70.50	88
0600	6" x 30"		15	.533		52	24.50		76.50	94.50
0610	6" x 34"		15	.533		56	24.50		80.50	99
1000	Acrylic, .125", 8" x 26"		15	.533		28	24.50		52.50	68.50
1010	8" x 36"		15	.533		38	24.50		62.50	79.50
1020	8" x 42"		15	.533		45	24.50		69.50	87
1030	10" x 26"		15	.533		35	24.50		59.50	76
1040	10" x 36"		15	.533		48	24.50		72.50	90.50
1050	10" x 42"		15	.533		68.50	24.50		93	113
1060	Map/Kick, 4" x 26"		15	.533		17	24.50		41.50	56
1070	4" x 36"		15	.533		24	24.50		48.50	64
1080	4" x 42"		15	.533		27	24.50		51.50	67
1090	6" x 26"		15	.533		23	24.50		47.50	63
1100	6" x 36"		15	.533		34	24.50		58.50	75
1110	6" x 42"		15	.533		39	24.50		63.50	80.50
1220	Brass, .050", 8" x 26"		15	.533		56	24.50		80.50	99
1230	8" x 36"		15	.533		75	24.50		99.50	120
1240	8" x 42"		15	.533		86	24.50		110.50	132
1250	10" x 26"		15	.533		71	24.50		95.50	116
1260	10" x 36"		15	.533		91	24.50		115.50	138
1270	10" x 42"		15	.533		105	24.50		129.50	154
1320	Map/Kick, 4" x 26"		15	.533		28	24.50		52.50	68.50
1330	4" x 36"		15	.533		39	24.50		63.50	80.50
1340	4" x 42"		15	.533		44	24.50		68.50	86
1350	6" x 26"		15	.533		38	24.50		62.50	79.50
1360	6" x 36"		15	.533		48	24.50		72.50	90.50
1370	6" x 42"		15	.533		55	24.50		79.50	98
1800	Aluminum, .050", 8" x 26"		15	.533		29	24.50		53.50	69.50

08 71 Door Hardware

08 71 20 – Hardware

08 71 20.95 Kick Plates

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1810	8" x 36"	1 Corp	15	.533	Eq.	40	24.50		64.50	81.50
1820	8" x 42"		15	.533		47	24.50		71.50	89
1830	10" x 26"		15	.533		36	24.50		60.50	77
1840	10" x 36"		15	.533		50	24.50		74.50	92.50
1850	10" x 42"		15	.533		59	24.50		83.50	103
1860	Mop/Kick, 4" x 26"		15	.533		15	24.50		39.50	54
1870	4" x 36"		15	.533		20	24.50		44.50	59.50
1880	4" x 42"		15	.533		24	24.50		48.50	64
1890	6" x 26"		15	.533		22	24.50		46.50	61.50
1900	6" x 36"		15	.533		30	24.50		54.50	70.50
1910	6" x 42"		15	.533		35	24.50		59.50	76

08 71 21 – Astragals

08 71 21.10 Exterior Mouldings, Astragals

0010 EXTERIOR MOULDINGS, ASTRAGALS

0400	One piece, overlapping cadmium plated steel, flat, 3/16" x 2"	1 Corp	90	.089	L.F.	4	4.08		8.08	10.70
0600	Prime coated steel, flat, 1/8" x 3"		90	.089		5.75	4.08		9.83	12.65
0800	Stainless steel, flat, 3/32" x 1-5/8"		90	.089		16	4.08		20.08	24
1000	Aluminum, flat, 1/8" x 2"		90	.089		4.10	4.08		8.18	10.80
1200	Nail on, "T" extrusion		120	.067		1.90	3.06		4.96	6.80
1300	Vinyl bulb insert		105	.076		2.50	3.49		5.99	8.15
1600	Screw on, "T" extrusion		90	.089		3.20	4.08		7.28	9.80
1700	Vinyl insert		75	.107		4.50	4.89		9.39	12.50
2000	"L" extrusion, neoprene bulbs		75	.107		4.10	4.89		8.99	12.05
2100	Neoprene sponge insert		75	.107		6.90	4.89		11.79	15.15
2200	Magnetic		75	.107		10.60	4.89		15.49	19.20
2400	Spring hinged security seal, with com		75	.107		6.80	4.89		11.69	15.05
2600	Spring loaded locking bolt, vinyl insert		45	.178		9.20	8.15		17.35	22.50
2800	Neoprene sponge strip, "Z" shaped, aluminum		60	.133		8.25	6.10		14.35	18.55
2900	Solid neoprene strip, nail on aluminum strip		90	.089		4.05	4.08		8.13	10.75
3000	One piece stile protection									
3020	Neoprene fabric loop, nail on aluminum strips	1 Corp	60	.133	L.F.	1.10	6.10		7.20	10.65
3110	Flush mounted aluminum extrusion, 1/2" x 1-1/4"		60	.133		6.90	6.10		13	17.05
3140	3/4" x 1-3/8"		60	.133		4.10	6.10		10.20	13.95
3160	1-1/8" x 1-3/4"		60	.133		4.70	6.10		10.80	14.60
3300	Mortise, 9/16" x 3/4"		60	.133		4.10	6.10		10.20	13.95
3320	13/16" x 1-3/8"		60	.133		4.30	6.10		10.40	14.20
3600	Spring bronze strip, nail on type		105	.076		1.85	3.49		5.34	7.45
3620	Screw on, with retainer		75	.107		2.70	4.89		7.59	10.50
3800	Flexible stainless steel housing, pile insert, 1/2" door		105	.076		7.25	3.49		10.74	13.40
3820	3/4" door		105	.076		8.10	3.49		11.59	14.30
4000	Extruded aluminum retainer, flush mount, pile insert		105	.076		2.25	3.49		5.74	7.90
4080	Mortise, felt insert		90	.089		4.55	4.08		8.63	11.30
4160	Mortise with spring, pile insert		90	.089		3.40	4.08		7.48	10.05
4400	Rigid vinyl retainer, mortise, pile insert		105	.076		2.70	3.49		6.19	8.35
4600	Wool pile filler strip, aluminum backing		105	.076		2.70	3.49		6.19	8.35
5000	Two piece overlapping astragal, extruded aluminum retainer									
5010	Pile insert	1 Corp	60	.133	L.F.	3.35	6.10		9.45	13.15
5020	Vinyl bulb insert		60	.133		1.85	6.10		7.95	11.50
5040	Vinyl flop insert		60	.133		3.65	6.10		9.75	13.45
5060	Solid neoprene flop insert		60	.133		6.55	6.10		12.65	16.65
5080	Hypalon rubber flop insert		60	.133		6.65	6.10		12.75	16.75
5090	Snap on cover, pile insert		60	.133		9.45	6.10		15.55	19.85

08 71 Door Hardware

08 71 21 – Astragals

08 71 21.10 Exterior Mouldings, Astragals		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5400	Mognetic oluminum, surfoce mounted	1 Corp	60	.133	L.F.	23	6.10		29.10	34.50
5500	Interlocking oluminum, 5/8" x 1" neoprene bulb insert		45	.178		5.70	8.15		13.85	18.85
5600	Adjustoble oluminum, 9/16" x 21/32", pile insert		45	.178		17.55	8.15		25.70	32
5790	For vinyl bulb, deduct					.75			.75	.83
5800	Mognetic, adjustoble, 9/16" x 21/32"	1 Corp	45	.178		23	8.15		31.15	37.50
6000	Two piece stile protection									
6010	Cloth bocked rubber loop, 1" gap, noil on oluminum strips	1 Corp	45	.178	L.F.	4.35	8.15		12.50	17.40
6040	Screw on oluminum strips		45	.178		6.55	8.15		14.70	19.80
6100	1-1/2" gap, screw on oluminum extrusion		45	.178		5.85	8.15		14	19.05
6240	Vinyl fobric loop, slotted oluminum extrusion, 1" gap		45	.178		2.20	8.15		10.35	15
6300	1-1/4" gap		45	.178		6.20	8.15		14.35	19.40

08 71 25 – Weatherstripping

08 71 25.10 Mechanical Seals, Weatherstripping

0010	MECHANICAL SEALS, WEATHERSTRIPPING									
1000	Doors, wood frome, interlocking, for 3' x 7' door, zinc	1 Corp	3	2.667	Opng.	44	122		166	238
1100	Bronze		3	2.667		56	122		178	251
1300	6' x 7' opening, zinc		2	4		54	183		237	345
1400	Bronze	▼	2	4	▼	65	183		248	355
1700	Wood frome, spring type, bronze									
1800	3' x 7' door	1 Corp	7.60	1.053	Opng.	23	48.50		71.50	100
1900	6' x 7' door	"	7	1.143	"	29.50	52.50		82	114
2200	Metol frome, spring type, bronze									
2300	3' x 7' door	1 Corp	3	2.667	Opng.	46.50	122		168.50	240
2400	6' x 7' door	"	2.50	3.200	"	52	147		199	283
2500	For stoinless steel, spring type, odd					133%				
2700	Metol frome, extruded sections, 3' x 7' door, oluminum	1 Corp	3	2.667	Opng.	28	122		150	220
2800	Bronze		3	2.667		82	122		204	279
3100	6' x 7' door, oluminum		1.50	5.333		35	245		280	415
3200	Bronze	▼	1.50	5.333	▼	137	245		382	525
3500	Threshold weatherstripping									
3650	Door sweep, flush mounted, oluminum	1 Corp	25	.320	EO.	19	14.65		33.65	43.50
3700	Vinyl		25	.320		18	14.65		32.65	42.50
5000	Goroge door bottom weatherstrip, 12' oluminum, cleor		14	.571		25	26		51	68
5010	Bronze		14	.571		90	26		116	140
5050	Bottom protection, Rubber		14	.571		37	26		63	81
5100	Threshold	▼	14	.571	▼	72	26		98	120

08 74 Access Control Hardware

08 74 13 – Card Key Access Control Hardware

08 74 13.50 Card Key Access

0010	CARD KEY ACCESS									
0020	Computerized system , processor, proximity reoder ond cords									
0030	Does not inculde door hordware, lockset or wiring									
0040	Cord key system for 1 door				EO.	1,175			1,175	1,300
0060	Cord key system for 2 doors					2,125			2,125	2,350
0080	Cord key system for 4 doors					2,650			2,650	2,900
0100	Processor for cord key access system					850			850	935
0160	Mognetic lock for electric access, 600 Pound holding force					190			190	209
0170	Mognetic lock for electric access, 1200 Pound holding force					190			190	209
0200	Proximity cord reoder					125			125	138

08 74 Access Control Hardware

08 74 19 – Biometric Identity Access Control Hardware

08 74 19.50 Biometric Identity Access				Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	BIOMETRIC IDENTITY ACCESS											
0220	Hond geometry scanner, mem of 512 users, excl striker/power			1 Elec	3	2.667	Eo.	2,100	142		2,242	2,525
0230	Memory upgrde for, odds 9,700 user profiles				8	1		300	53.50		353.50	410
0240	Adds 32,500 user profiles				8	1		600	53.50		653.50	740
0250	Prison type, memary of 256 users, excl striker, power				3	2.667		2,600	142		2,742	3,075
0260	Memory upgrde for, odds 3,300 user profiles				8	1		250	53.50		303.50	355
0270	Adds 9,700 user profiles				8	1		460	53.50		513.50	585
0280	Adds 27,900 user profiles				8	1		610	53.50		663.50	750
0290	All weather, mem of 512 users, excl striker/power				3	2.667		3,900	142		4,042	4,525
0300	Focial & fingerprint scanner, combination unit, excl striker/power				3	2.667		4,300	142		4,442	4,950
0310	Access for, for initial setup, excl striker/power				3	2.667		1,100	142		1,242	1,425

08 75 Window Hardware

08 75 30 – Weatherstripping

08 75 30.10 Mechanical Weather Seals

0010	MECHANICAL WEATHER SEALS , Window, dauble hung, 3' X 5'											
0020	Zinc			1 Corp	7.20	1.111	Opng.	20	51		71	101
0100	Bronze				7.20	1.111		39	51		90	122
0500	As obave but heavy duty, zinc				4.60	1.739		20	79.50		99.50	145
0600	Bronze			▼	4.60	1.739	▼	70	79.50		149.50	200

08 79 Hardware Accessories

08 79 13 – Key Storage Equipment

08 79 13.10 Key Cabinets

0010	KEY CABINETS											
0020	Woll mounted, 60 key copocity			1 Corp	20	.400	Eo.	113	18.35		131.35	154
0200	Drower type, 600 key copocity			1 Clab	15	.533		800	19.55		819.55	910
0300	2,400 key capacity				20	.400		4,200	14.65		4,214.65	4,650
0400	Tray type, 20 key copacity				50	.160		62.50	5.85		68.35	78
0500	50 key copacity			▼	40	.200	▼	102	7.35		109.35	123

08 79 20 – Door Accessories

08 79 20.10 Door Hardware Accessories

0010	DOOR HARDWARE ACCESSORIES											
0140	Door bolt, surface, 4"			1 Corp	32	.250	Ea.	11.70	11.45		23.15	30.50
0160	Doar latch			"	12	.667	"	8.55	30.50		39.05	56.50
0200	Sliding closet door											
0220	Track and hanger, single			1 Corp	10	.800	Eo.	56	36.50		92.50	118
0240	Dauble				8	1		80	46		126	159
0260	Door guide, single				48	.167		30	7.65		37.65	45
0280	Double				48	.167		40	7.65		47.65	56
0600	Deadbalt and lock cover plate, brass or stainless steel				30	.267		28	12.25		40.25	50
0620	Hole cover plate, brass or chrame				35	.229		8	10.50		18.50	25
2240	Mortise lockset, passage, lever handle				9	.889		170	41		211	250
4000	Security chain, stondard				18	.444		10	20.50		30.50	42.50

08 81 Glass Glazing

08 81 10 – Float Glass

08 81 10.10 Various Types and Thickness of Float Glass			Daily	Labor-			2014 Bare Costs		Total		
			Crew	Output	Hours	Unit	Material	Labor	Equipment	Total	Incl O&P
0010	VARIOUS TYPES AND THICKNESS OF FLOAT GLASS		R088110-10								
0020	3/16" Plain		2 Glaz	130	.123	S.F.	4.93	5.40		10.33	13.65
0200	Tempered, clear			130	.123		6.85	5.40		12.25	15.80
0300	Tinted			130	.123		7.80	5.40		13.20	16.85
0600	1/4" thick, clear, plain			120	.133		5.75	5.85		11.60	15.30
0700	Tinted			120	.133		9.10	5.85		14.95	18.95
0800	Tempered, clear			120	.133		8.70	5.85		14.55	18.50
0900	Tinted			120	.133		10.70	5.85		16.55	21
1600	3/8" thick, clear, plain			75	.213		10.05	9.40		19.45	25.50
1700	Tinted			75	.213		15.70	9.40		25.10	31.50
1800	Tempered, clear			75	.213		16.40	9.40		25.80	32.50
1900	Tinted			75	.213		18.55	9.40		27.95	35
2200	1/2" thick, clear, plain			55	.291		17	12.80		29.80	38
2300	Tinted			55	.291		27.50	12.80		40.30	49.50
2400	Tempered, clear			55	.291		24.50	12.80		37.30	46
2500	Tinted			55	.291		25.50	12.80		38.30	47.50
2800	5/8" thick, clear, plain			45	.356		27.50	15.65		43.15	54
2900	Tempered, clear			45	.356		31.50	15.65		47.15	58.50
3200	3/4" thick, clear, plain			35	.457		35.50	20		55.50	69.50
3300	Tempered, clear			35	.457		41	20		61	76
3600	1" thick, clear, plain		▼	30	.533		59	23.50		82.50	100
8900	Far low emissivity coating for 3/16" & 1/4" only, add to above						▼	18%			

08 81 13 – Decorative Glass Glazing

08 81 13.10 Beveled Glass

0010	BEVELED GLASS, with design patterns											
0020	Minimum			2 Glaz	150	.107	S.F.	60.50	4.70		65.20	73.50
0050	Average				125	.128		133	5.65		138.65	155
0100	Maximum				100	.160		233	7.05		240.05	268
0102	Maximum, per L.F. for 30" cabinet			1 Glaz	40	.200	L.F.	585	8.80		593.80	655

08 81 13.20 Faceted Glass

0010	FACETED GLASS, Color tinted 3/4" thick											
0020	Minimum			2 Glaz	95	.168	S.F.	48.50	7.40		55.90	64.50
0100	Maximum			"	75	.213	"	83	9.40		92.40	106

08 81 13.30 Sandblasted Glass

0010	SANDBLASTED GLASS, float glass											
0020	1/8" thick			2 Glaz	160	.100	S.F.	11	4.41		15.41	18.80
0100	3/16" thick				130	.123		12.15	5.40		17.55	21.50
0500	1/4" thick				120	.133		12.65	5.85		18.50	23
0600	3/8" thick				75	.213	▼	13.60	9.40		23	29.50

08 81 13.40 Glass Column Covers

0010	GLASS COLUMN COVERS											
0020	Tempered glass column cover, 24" dia., up to 12' high			2 Glaz	30	.533	V.L.F.	82	23.50		105.50	126
0040	up to 20' high			"	24	.667	"	120	29.50		149.50	177

08 81 17 – Fire Glass

08 81 17.10 Fire Resistant Glass

0010	FIRE RESISTANT GLASS											
0020	Fire Glass Minimum			2 Glaz	40	.400	S.F.	30	17.60		47.60	60
0030	Mid Range				40	.400		70	17.60		87.60	104
0050	High End				40	.400		310	17.60		327.60	365

08 81 Glass Glazing

08 81 20 – Vision Panels

08 81 20.10 Full Vision		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	FULL VISION , window system with 3/4" glass mullions									
0020	Up to 10' high	H-2	130	.185	S.F.	62.50	7.70		70.20	81
0100	10' to 20' high, minimum		110	.218		67	9.05		76.05	87.50
0150	Average		100	.240		72	10		82	95
0200	Maximum	▼	80	.300	▼	81	12.45		93.45	108

08 81 25 – Glazing Variables

08 81 25.10 Applications of Glazing

0010	APPLICATIONS OF GLAZING	R088110-10								
0500	For high rise glazing, exterior, odd per S.F. per story				S.F.					.46
0600	For glass replacement, odd				"		100%			
0700	For gasket settings, odd				L.F.	5.75			5.75	6.35
0900	For sloped glazing, odd				S.F.		26%			
2000	Fabrication, polished edges, 1/4" thick				Inch	.55			.55	.61
2100	1/2" thick					1.30			1.30	1.43
2500	Mitered edges, 1/4" thick					1.30			1.30	1.43
2600	1/2" thick					2.15			2.15	2.37

08 81 30 – Insulating Glass

08 81 30.10 Reduce Heat Transfer Glass

0010	REDUCE HEAT TRANSFER GLASS	R088110-10								
0015	2 lites 1/8" float, 1/2" thk under 15 S.F.									
0020	Clear		2 Glaz	95	.168	S.F.	9.95	7.40	17.35	22.50
0100	Tinted			95	.168		13.80	7.40	21.20	26.50
0200	2 lites 3/16" float, for 5/8" thk unit, 15 to 30 S.F., clear			90	.178		13.70	7.85	21.55	27
0300	Tinted			90	.178		13.75	7.85	21.60	27
0400	1" thk, dbl. glazed, 1/4" float, 30-70 S.F., clear			75	.213		16.60	9.40	26	32.50
0500	Tinted			75	.213		23.50	9.40	32.90	40.50
0600	1" thick double glazed, 1/4" float, 1/4" wire			75	.213		23	9.40	32.40	40
0700	1/4" float, 1/4" tempered			75	.213		30.50	9.40	39.90	48
0800	1/4" wire, 1/4" tempered			75	.213		29	9.40	38.40	46.50
0900	Both lites, 1/4" wire			75	.213		37	9.40	46.40	55.50
2000	Both lites, light & heat reflective			85	.188		31.50	8.30	39.80	47
2500	Heat reflective, film inside, 1" thick unit, clear			85	.188		27.50	8.30	35.80	43
2600	Tinted			85	.188		28.50	8.30	36.80	44
3000	Film on weatherside, clear, 1/2" thick unit			95	.168		19.60	7.40	27	33
3100	5/8" thick unit			90	.178		19.90	7.85	27.75	34
3200	1" thick unit			85	.188		27	8.30	35.30	42.50

08 81 35 – Translucent Glass

08 81 35.10 Obscure Glass

0010	OBSCURE GLASS									
0020	1/8" thick, Minimum		2 Glaz	140	.114	S.F.	11.60	5.05	16.65	20.50
0100	Maximum			125	.128		13.70	5.65	19.35	23.50
0300	7/32" thick, minimum			120	.133		12.70	5.85	18.55	23
0400	Maximum	▼		105	.152	▼	15.95	6.70	22.65	28

08 81 35.20 Patterned Glass

0010	PATTERNED GLASS , colored									
0020	1/8" thick, Minimum		2 Glaz	140	.114	S.F.	9.30	5.05	14.35	17.90
0100	Maximum			125	.128		15.80	5.65	21.45	26
0300	7/32" thick, minimum			120	.133		11.65	5.85	17.50	22
0400	Maximum	▼		105	.152	▼	16.95	6.70	23.65	29

08 81 Glass Glazing

08 81 45 – Sheet Glass

08 81 45.10 Window Glass, Sheet		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	WINDOW GLASS, SHEET gray									
0020	1/8" thick	2 Gloz	160	.100	S.F.	5.70	4.41		10.11	12.95
0200	1/4" thick	"	130	.123	"	7	5.40		12.40	15.95

08 81 50 – Spandrel Glass

08 81 50.10 Glass for Non Vision Areas

0010	GLASS FOR NON VISION AREAS, 1/4" thick standord colors									
0020	Up to 1000 S.F.	2 Gloz	110	.145	S.F.	16.50	6.40		22.90	28
0200	1,000 to 2,000 S.F.	"	120	.133	"	15.30	5.85		21.15	26
0300	For custom colors, odd				Total	10%				
0500	For 3/8" thick, odd				S.F.	11.90			11.90	13.10
1000	For double coated, 1/4" thick, add					4.25			4.25	4.68
1200	For insulotion on ponels, odd					6.95			6.95	7.65
2000	Ponels, insulated, with oluminum bocked fiberglass, 1" thick	2 Gloz	120	.133		16.85	5.85		22.70	27.50
2100	2" thick	"	120	.133		20	5.85		25.85	31

08 81 55 – Window Glass

08 81 55.10 Sheet Glass

0010	SHEET GLASS(window), clear float, stops, putty bed									
0015	1/8" thick, clear float	2 Gloz	480	.033	S.F.	3.60	1.47		5.07	6.20
0500	3/16" thick, clear		480	.033		5.80	1.47		7.27	8.65
0600	Tinted		480	.033		7.45	1.47		8.92	10.45
0700	Tempered	▼	480	.033	▼	9.20	1.47		10.67	12.35

08 81 65 – Wire Glass

08 81 65.10 Glass Reinforced With Wire

0010	GLASS REINFORCED WITH WIRE									
0012	1/4" thick rough obscure	2 Gloz	135	.119	S.F.	23.50	5.20		28.70	33.50
1000	Polished wire, 1/4" thick, diomond, clear		135	.119		27.50	5.20		32.70	38
1500	Pinstripe, obscure	▼	135	.119	▼	40.50	5.20		45.70	52.50

08 83 Mirrors

08 83 13 – Mirrored Glass Glazing

08 83 13.10 Mirrors

0010	MIRRORS, No fromes, woll type, 1/4" plote gloss, polished edge									
0100	Up to 5 S.F.	2 Gloz	125	.128	S.F.	9.50	5.65		15.15	19.05
0200	Over 5 S.F.		160	.100		9.25	4.41		13.66	16.90
0500	Door type, 1/4" plote gloss, up to 12 S.F.		160	.100		8.55	4.41		12.96	16.10
1000	Floot gloss, up to 10 S.F., 1/8" thick		160	.100		5.65	4.41		10.06	12.90
1100	3/16" thick		150	.107		6.95	4.70		11.65	14.80
1500	12" x 12" woll tiles, square edge, clear		195	.082		2.22	3.61		5.83	7.95
1600	Veined		195	.082		5.80	3.61		9.41	11.90
2000	1/4" thick, stock sizes, one way transporent		125	.128		18.95	5.65		24.60	29.50
2010	Bothroom, unfromed, lominoted	▼	160	.100	▼	13.30	4.41		17.71	21.50

08 83 13.15 Reflective Glass

0010	REFLECTIVE GLASS									
0100	1/4" float with fused metollic oxide fixed	G	2 Gloz	115	.139	S.F.	16.95	6.15	23.10	28
0500	1/4" float gloss with reflective applied coating	G	"	115	.139	"	13.70	6.15	19.85	24.50

08 84 Plastic Glazing

08 84 10 – Plexiglass Glazing

08 84 10.10 Plexiglass Acrylic

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	PLEXIGLASS ACRYLIC, clear, masked,									
0020	1/8" thick, cut sheets	2 Glaz	170	.094	S.F.	12	4.15		16.15	19.50
0200	Full sheets		195	.082		5	3.61		8.61	11
0500	1/4" thick, cut sheets		165	.097		14	4.27		18.27	22
0600	Full sheets		185	.086		9	3.81		12.81	15.70
0900	3/8" thick, cut sheets		155	.103		20	4.55		24.55	29
1000	Full sheets		180	.089		15	3.92		18.92	22.50
1300	1/2" thick, cut sheets		135	.119		28	5.20		33.20	39
1400	Full sheets		150	.107		20	4.70		24.70	29
1700	3/4" thick, cut sheets		115	.139		69	6.15		75.15	85.50
1800	Full sheets		130	.123		40	5.40		45.40	52.50
2100	1" thick, cut sheets		105	.152		77.50	6.70		84.20	95.50
2200	Full sheets		125	.128		48	5.65		53.65	61.50
3000	Colored, 1/8" thick, cut sheets		170	.094		18	4.15		22.15	26
3200	Full sheets		195	.082		11	3.61		14.61	17.60
3500	1/4" thick, cut sheets		165	.097		20	4.27		24.27	28.50
3600	Full sheets		185	.086		14	3.81		17.81	21
4000	Mirrars, untinted, cut sheets, 1/8" thick		185	.086		12	3.81		15.81	19
4200	1/4" thick		180	.089		16	3.92		19.92	23.50

08 84 20 – Polycarbonate

08 84 20.10 Thermoplastic

0010	THERMOPLASTIC, clear, masked, cut sheets									
0020	1/8" thick	2 Glaz	170	.094	S.F.	14	4.15		18.15	21.50
0500	3/16" thick		165	.097		16	4.27		20.27	24
1000	1/4" thick		155	.103		17	4.55		21.55	25.50
1500	3/8" thick		150	.107		26	4.70		30.70	35.50

08 87 Glazing Surface Films

08 87 13 – Solar Control Films

08 87 13.10 Solar Films On Glass

0010	SOLAR FILMS ON GLASS (glass not included)									
2000	Minimum	G	2 Glaz	180	.089	S.F.	6.80	3.92	10.72	13.45
2050	Maximum	G	"	225	.071	"	15.30	3.13	18.43	21.50

08 87 23 – Safety and Security Films

08 87 23.16 Security Films

0010	SECURITY FILMS, clear, 32000 psi tensile strength, adhered to glass									
0100	.002" thick, daylight installation		H-2	950	.025	S.F.	2.70	1.05	3.75	4.57
0150	.004" thick, daylight installation	R088110-10		800	.030		3.35	1.25	4.60	5.60
0200	.006" thick, daylight installation			700	.034		3.60	1.43	5.03	6.15
0210	Install for anchorage			600	.040		4	1.66	5.66	6.95
0400	.007" thick, daylight installation			600	.040		4.45	1.66	6.11	7.45
0410	Install for anchorage			500	.048		4.94	2	6.94	8.50
0500	.008" thick, daylight installation			500	.048		5	2	7	8.55
0510	Install for anchorage			500	.048		5.55	2	7.55	9.15
0600	.015" thick, daylight installation			400	.060		8.80	2.49	11.29	13.50
0610	Install for anchorage			400	.060		5.55	2.49	8.04	9.90
0900	Security film anchorage, mechanical attachment and cover plate		H-3	370	.043	L.F.	9.75	1.70	11.45	13.30
0950	Security film anchorage, wet glaze structural caulking		1 Glaz	225	.036	"	.92	1.57	2.49	3.39
1000	Adhered security film removal		1 Clab	275	.029	S.F.		1.07	1.07	1.65

08 88 Special Function Glazing

08 88 40 – Acoustical Glass Units

08 88 40.10 Sound Reduction Units

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SOUND REDUCTION UNITS, 1 lite at 3/8", 1 lite at 3/16"									
0020	Far 1" thick	2 Glaz	100	.160	S.F.	34	7.05		41.05	48
0100	Far 4" thick	"	80	.200	"	58.50	8.80		67.30	77.50

08 88 56 – Ballistics-Resistant Glazing

08 88 56.10 Laminated Glass

0010	LAMINATED GLASS									
0020	Clear float .03" vinyl 1/4"	2 Glaz	90	.178	S.F.	12.10	7.85		19.95	25
0100	3/8" thick		78	.205		22.50	9.05		31.55	38.50
0200	.06" vinyl, 1/2" thick		65	.246		25.50	10.85		36.35	44.50
1000	5/8" thick		90	.178		29.50	7.85		37.35	44.50
2000	Bullet-resisting, 1-3/16" thick, to 15 S.F.		16	1		93	44		137	169
2100	Over 15 S.F.		16	1		108	44		152	185
2500	2-1/4" thick, to 15 S.F.		12	1.333		149	58.50		207.50	254
2600	Over 15 S.F.		12	1.333		140	58.50		198.50	244
2700	Level 2 (.357 magnum), NIJ and UL		12	1.333		76	58.50		134.50	173
2750	Level 3A (.44 magnum) NIJ, UL 3		12	1.333		81	58.50		139.50	179
2800	Level 4 (AK-47) NIJ, UL 7 & 8		12	1.333		112	58.50		170.50	213
2850	Level 5 (M-16) UL		12	1.333		115	58.50		173.50	217
2900	Level 3 (7.62 Armor Piercing) NIJ, UL 4 & 5		12	1.333		136	58.50		194.50	240

08 91 Louvers

08 91 19 – Fixed Louvers

08 91 19.10 Aluminum Louvers

0010	ALUMINUM LOUVERS									
0020	Aluminum with screen, residential, 8" x 8"	1 Corp	38	.211	Ea.	17.50	9.65		27.15	34
0100	12" x 12"		38	.211		15	9.65		24.65	31.50
0200	12" x 18"		35	.229		19	10.50		29.50	37
0250	14" x 24"		30	.267		26	12.25		38.25	47.50
0300	18" x 24"		27	.296		29	13.60		42.60	53
0500	24" x 30"		24	.333		62.50	15.30		77.80	92.50
0700	Triangle, adjustable, small		20	.400		47.50	18.35		65.85	81
0800	Large		15	.533		59	24.50		83.50	103
1200	Extruded aluminum, see Section 23 37 15.40									
2100	Midget, aluminum, 3/4" deep, 1" diameter	1 Corp	85	.094	Ea.	.78	4.32		5.10	7.50
2150	3" diameter		60	.133		2.28	6.10		8.38	11.95
2200	4" diameter		50	.160		3.64	7.35		10.99	15.30
2250	6" diameter		30	.267		4.10	12.25		16.35	23.50

08 91 26 – Door Louvers

08 91 26.10 Steel Louvers, 18 Gauge, Fixed Blade

0010	STEEL LOUVERS, 18 GAUGE, FIXED BLADE									
0050	12"-x 12", with enamel or powder coat	1 Corp	20	.400	Ea.	82	18.35		100.35	119
0055	18" x 12"		20	.400		94	18.35		112.35	132
0060	18" x 18"		20	.400		87.50	18.35		105.85	125
0065	24" x 12"		20	.400		113	18.35		131.35	153
0070	24" x 18"		20	.400		126	18.35		144.35	168
0075	24" x 24"		20	.400		150	18.35		168.35	194
0100	12" x 12", galvanized		20	.400		65	18.35		83.35	100
0105	18" x 12"		20	.400		76.50	18.35		94.85	113
0115	24" x 12"		20	.400		89.50	18.35		107.85	127
0125	24" x 24"		20	.400		127	18.35		145.35	168

08 95 Vents

08 95 13 – Soffit Vents

08 95 13.10 Wall Louvers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	WALL LOUVERS									
2330	Soffit vent, continuous, 3" wide, aluminum, mill finish	1 Carp	200	.040	L.F.	.62	1.83		2.45	3.51
2340	Baked enamel finish		200	.040	"	.68	1.83		2.51	3.58
2400	Under eaves vent, aluminum, mill finish, 16" x 4"		48	.167	Ea.	1.90	7.65		9.55	13.90
2500	16" x 8"		48	.167	"	2.18	7.65		9.83	14.20

08 95 16 – Wall Vents

08 95 16.10 Louvers										
0010	LOUVERS									
0020	Redwood, 2'-0" diameter, full circle	1 Carp	16	.500	Ea.	190	23		213	245
0100	Half circle		16	.500		190	23		213	245
0200	Octagonal		16	.500		142	23		165	192
0300	Triangular, 5/12 pitch, 5'-0" at base		16	.500		200	23		223	256
7000	Vinyl gable vent, 8" x 8"		38	.211		14	9.65		23.65	30.50
7020	12" x 12"		38	.211		27	9.65		36.65	44.50
7080	12" x 18"		35	.229		35	10.50		45.50	54.50
7200	18" x 24"		30	.267		45	12.25		57.25	68.50

Estimating Tips

General

- Room Finish Schedule: A complete set of plans should contain a room finish schedule. If one is not available, it would be well worth the time and effort to obtain one.

09 20 00 Plaster and Gypsum Board

- Lath is estimated by the square yard plus a 5% allowance for waste. Furring, channels, and accessories are measured by the linear foot. An extra foot should be allowed for each accessory miter or stop.
- Plaster is also estimated by the square yard. Deductions for openings vary by preference, from zero deduction to 50% of all openings over 2 feet in width. The estimator should allow one extra square foot for each linear foot of horizontal interior or exterior angle located below the ceiling level. Also, double the areas of small radius work.
- Drywall accessories, studs, track, and acoustical caulking are all measured by the linear foot. Drywall taping is figured by the square foot. Gypsum wallboard is estimated by the square foot. No material deductions should be made for door or window openings under 32 S.F.

09 60 00 Flooring

- Tile and terrazzo areas are taken off on a square foot basis. Trim and base materials are measured by the linear foot. Accent tiles are listed per each. Two basic methods of installation are used. Mud set is approximately 30% more expensive than thin set. In terrazzo work, be sure to include the linear footage of embedded decorative strips, grounds, machine rubbing, and power cleanup.
- Wood flooring is available in strip, parquet, or block configuration. The latter two types are set in adhesives with quantities estimated by the square foot. The laying pattern will influence labor costs and material waste. In addition to the material and labor for laying wood floors, the estimator must make allowances for sanding and finishing these areas unless the flooring is prefinished.
- Sheet flooring is measured by the square yard. Roll widths vary, so consideration should be given to use the most economical width, as waste must be figured into the total quantity. Consider also the installation methods available, direct glue down or stretched.

09 70 00 Wall Finishes

- Wall coverings are estimated by the square foot. The area to be covered is measured, length by height of wall above baseboards, to calculate the square footage of each wall. This figure is divided by the number of square feet in the single roll which is being

used. Deduct, in full, the areas of openings such as doors and windows. Where a pattern match is required allow 25%–30% waste.

09 80 00 Acoustic Treatment

- Acoustical systems fall into several categories. The takeoff of these materials should be by the square foot of area with a 5% allowance for waste. Do not forget about scaffolding, if applicable, when estimating these systems.

09 90 00 Painting and Coating

- A major portion of the work in painting involves surface preparation. Be sure to include cleaning, sanding, filling, and masking costs in the estimate.
- Protection of adjacent surfaces is not included in painting costs. When considering the method of paint application, an important factor is the amount of protection and masking required. These must be estimated separately and may be the determining factor in choosing the method of application.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

09 01 Maintenance of Finishes

09 01 60 – Maintenance of Flooring

09 01 60.10 Carpet Maintenance

0010	CARPET MAINTENANCE	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0020	Steam clean, per cleaning, minimum	1 Clab	3000	.003	S.F.	.05	.10		.15	.21
0500	Maximum	"	2000	.004	"	.07	.15		.22	.31

09 01 70 – Maintenance of Wall Finishes

09 01 70.10 Gypsum Wallboard Repairs

0010	GYPSUM WALLBOARD REPAIRS									
0100	Fill and sand, pin/nail holes	1 Carp	960	.008	Ea.		.38		.38	.59
0110	Screw head paps		480	.017			.76		.76	1.18
0120	Dents, up to 2" square		48	.167		.01	7.65		7.66	11.80
0130	2" to 4" square		24	.333		.04	15.30		15.34	23.50
0140	Cut square, patch, sand and finish, holes, up to 2" square		12	.667		.04	30.50		30.54	47
0150	2" to 4" square		11	.727		.09	33.50		33.59	51.50
0160	4" to 8" square		10	.800		.24	36.50		36.74	57
0170	8" to 12" square		8	1		.47	46		46.47	71.50
0180	12" to 32" square		6	1.333		1.55	61		62.55	96
0210	16" by 48"		5	1.600		2.61	73.50		76.11	116
0220	32" by 48"		4	2		4.12	91.50		95.62	147
0230	48" square		3.50	2.286		5.80	105		110.80	168
0240	60" square		3.20	2.500		9.35	115		124.35	187
0500	Skim coat surface with joint compound		1600	.005	S.F.	.03	.23		.26	.39
0510	Prepare, retape and refinish joints		60	.133	L.F.	.67	6.10		6.77	10.20

09 05 Common Work Results for Finishes

09 05 05 – Selective Finishes Demolition

09 05 05.10 Selective Demolition, Ceilings

0010	SELECTIVE DEMOLITION, CEILINGS	R024119-10								
0200	Ceiling, drywall, furred and nailed or screwed	2 Clab	800	.020	S.F.		.73		.73	1.13
0220	On metal frame		760	.021			.77		.77	1.19
0240	On suspension system, including system		720	.022			.81		.81	1.26
1000	Plaster, lime and horse hair, on wood lath, incl. lath		700	.023			.84		.84	1.29
1020	On metal lath		570	.028			1.03		1.03	1.59
1100	Gypsum, on gypsum lath		720	.022			.81		.81	1.26
1120	On metal lath		500	.032			1.17		1.17	1.81
1200	Suspended ceiling, mineral fiber, 2' x 2' or 2' x 4'		1500	.011			.39		.39	.60
1250	On suspension system, incl. system		1200	.013			.49		.49	.75
1500	Tile, wood fiber, 12" x 12", glued		900	.018			.65		.65	1.01
1540	Stapled		1500	.011			.39		.39	.60
1580	On suspension system, incl. system		760	.021			.77		.77	1.19
2000	Wood, tongue and groove, 1" x 4"		1000	.016			.59		.59	.90
2040	1" x 8"		1100	.015			.53		.53	.82
2400	Plywood or wood fiberboard, 4' x 8' sheets		1200	.013			.49		.49	.75

09 05 05.20 Selective Demolition, Flooring

0010	SELECTIVE DEMOLITION, FLOORING	R024119-10								
0200	Brick with mortar	2 Clab	475	.034	S.F.		1.23		1.23	1.90
0400	Carpet, banded, including surface scraping		2000	.008			.29		.29	.45
0440	Scrim applied		8000	.002			.07		.07	.11
0480	Tackless		9000	.002			.07		.07	.10
0550	Carpet tile, releasable adhesive		5000	.003			.12		.12	.18
0560	Permanent adhesive		1850	.009			.32		.32	.49
0600	Composition, acrylic or epoxy		400	.040			1.47		1.47	2.26

09 05 Common Work Results for Finishes

09 05 05 – Selective Finishes Demolition

09 05 05.20 Selective Demolition, Flooring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0700	Concrete, scarify skin	A-1A	225	.036	S.F.		1.68	.95	2.63	3.65
0800	Resilient, sheet goods	2 Clob	1400	.011			.42		.42	.65
0820	For gym floors	"	900	.018			.65		.65	1.01
0850	Vinyl or rubber cove base	1 Clob	1000	.008	L.F.		.29		.29	.45
0860	Vinyl or rubber cove base, molded corner	"	1000	.008	Eo.		.29		.29	.45
0870	For glued and couled instollotion, add to labor						50%			
0900	Vinyl composition tile, 12" x 12"	2 Clob	1000	.016	S.F.		.59		.59	.90
2000	Tile, ceramic, thin set		675	.024			.87		.87	1.34
2020	Mud set		625	.026			.94		.94	1.45
2200	Morble, slote, thin set		675	.024			.87		.87	1.34
2220	Mud set		625	.026			.94		.94	1.45
2600	Terrozzo, thin set		450	.036			1.30		1.30	2.01
2620	Mud set		425	.038			1.38		1.38	2.13
2640	Terrozzo, cost in ploc	▼	300	.053			1.95		1.95	3.02
3000	Wood, block, on end	1 Corp	400	.020			.92		.92	1.42
3200	Porquet		450	.018			.82		.82	1.26
3400	Strip flooring, interior, 2-1/4" x 25/32" thick		325	.025			1.13		1.13	1.74
3500	Exterior, porch flooring, 1" x 4"		220	.036			1.67		1.67	2.57
3800	Subfloor, tongue and groove, 1" x 6"		325	.025			1.13		1.13	1.74
3820	1" x 8"		430	.019			.85		.85	1.32
3840	1" x 10"		520	.015			.71		.71	1.09
4000	Plywood, noiled		600	.013			.61		.61	.94
4100	Glued ond noiled		400	.020			.92		.92	1.42
4200	Hordboard, 1/4" thick	▼	760	.011			.48		.48	.75
8000	Remove flooring, bead blost, minimum	A-1A	1000	.008			.38	.21	.59	.83
8100	Moximum		400	.020			.95	.54	1.49	2.06
8150	Mostic only	▼	1500	.005	▼		.25	.14	.39	.55

09 05 05.30 Selective Demolition, Walls and Partitions

0010	SELECTIVE DEMOLITION, WALLS AND PARTITIONS	R024119-10								
0020	Wolls, concrete, reinforced	B-39	120	.400	C.F.		15.50	1.95	17.45	26
0025	Ploin	"	160	.300			11.60	1.46	13.06	19.45
0100	Brick, 4" to 12" thick	B-9	220	.182			6.75	1.06	7.81	11.55
0200	Concrete block, 4" thick		1150	.035	S.F.		1.29	.20	1.49	2.21
0280	8" thick		1050	.038			1.41	.22	1.63	2.42
0300	Exterior stucco 1" thick over mesh	▼	3200	.013			.46	.07	.53	.79
1000	Drywall, noiled or screwed	1 Clob	1000	.008			.29		.29	.45
1010	2 loyers		400	.020			.73		.73	1.13
1020	Glued ond noiled		900	.009			.33		.33	.50
1500	Fiberboard, noiled		900	.009			.33		.33	.50
1520	Glued ond noiled		800	.010			.37		.37	.57
1568	Plenum borrier, sheet lead		300	.027			.98		.98	1.51
2000	Movable wolls, metol, 5' high		300	.027			.98		.98	1.51
2020	8' high	▼	400	.020			.73		.73	1.13
2200	Metol or wood studs, finish 2 sides, fiberboard	B-1	520	.046			1.72		1.72	2.66
2250	Loth ond ploster		260	.092			3.45		3.45	5.30
2300	Plosterboard (drywall)		520	.046			1.72		1.72	2.66
2350	Plywood		450	.053			1.99		1.99	3.07
2800	Poneling, 4' x 8' sheets	1 Clob	475	.017			.62		.62	.95
3000	Ploster, lime ond horsehoir, on wood loth		400	.020			.73		.73	1.13
3020	On metol loth		335	.024			.88		.88	1.35
3400	Gypsum or perlite, on gypsum loth		410	.020			.72		.72	1.10
3420	On metol loth	▼	300	.027	▼		.98		.98	1.51

09 05 Common Work Results for Finishes

09 05 05 – Selective Finishes Demolition

09 05 05.30 Selective Demolition, Walls and Partitions		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3450	Plaster, interior gypsum, ocoustic, or cement	1 Clob	60	.133	S.Y.		4.89		4.89	7.55
3500	Stucco, an masonry		145	.055			2.02		2.02	3.12
3510	Commercial 3-coot		80	.100			3.67		3.67	5.65
3520	Interior stucco		25	.320			11.75		11.75	18.10
3600	Plywood, one side	B-1	1500	.016	S.F.		.60		.60	.92
3750	Terro cotto black ond plaster, to 6" thick	"	175	.137			5.10		5.10	7.90
3760	Tile, ceromic, on wolls, thin set	1 Clob	300	.027			.98		.98	1.51
3765	Mud set		250	.032			1.17		1.17	1.81
3800	Tailet portitions, slate ar morble		5	1.600	Ea.		58.50		58.50	90.50
3820	Metal or plastic		8	1	"		36.50		36.50	56.50
5000	Wollcovering, vinyl	1 Pope	700	.011	S.F.		.45		.45	.68
5010	With release agent		1500	.005			.21		.21	.32
5025	Wollpaper, 2 loyers ar less, by hond		250	.032			1.27		1.27	1.92
5035	3 loyers or more		165	.048			1.93		1.93	2.90
5040	Designer		480	.017			.66		.66	1

09 21 Plaster and Gypsum Board Assemblies

09 21 13 – Plaster Assemblies

09 21 13.10 Plaster Partition Wall

0010 PLASTER PARTITION WALL										
0400	Stud wolls, 3.4 lb. metal loth, 3 coot gypsum plaster, 2 sides									
0600	2" x 4" wood studs, 16" O.C.	J-2	315	.152	S.F.	3.32	6.10	.46	9.88	13.30
0700	2-1/2" metal studs, 25 ga., 12" O.C.		325	.148		3.08	5.95	.44	9.47	12.80
0800	3-5/8" metal studs, 25 ga., 16" O.C.		320	.150		3.10	6	.45	9.55	12.95
0900	Gypsum loth, 2 coot vermiculite plaster, 2 sides									
1000	2" x 4" wood studs, 16" O.C.	J-2	355	.135	S.F.	3.70	5.45	.40	9.55	12.65
1200	2-1/2" metal studs, 25 ga., 12" O.C.		365	.132		3.28	5.30	.39	8.97	11.95
1300	3-5/8" metal studs, 25 ga., 16" O.C.		360	.133		3.37	5.35	.40	9.12	12.20

09 21 16 – Gypsum Board Assemblies

09 21 16.23 Gypsum Board Shaft Wall Assemblies

0010 GYPSUM BOARD SHAFT WALL ASSEMBLIES										
0020	Covity type on 25 ga. J-track & C-H studs, 24" O.C.									
0030	1" thick coreboard woll liner an shoft side									
0040	2-hour assembly with double loyer									
0060	5/8" fire rated gypsum board on room side	2 Corp	220	.073	S.F.	2.02	3.33		5.35	7.35
0100	3-hour assembly with triple loyer									
0300	5/8" fire rated gypsum board on room side	2 Corp	180	.089	S.F.	1.70	4.08		5.78	8.15
0400	4-hour assembly, 1" coreboard, 5/8" fire rated gypsum board									
0600	ond 3/4" galv. metal furring channels, 24" O.C., with									
0700	Double loyer 5/8" fire rated gypsum board on room side	2 Corp	110	.145	S.F.	1.59	6.65		8.24	12.05
0900	For toping & finishing, odd per side	1 Corp	1050	.008	"	.05	.35		.40	.59
1000	For insulation, see Section 07 21									
5200	For work over 8' high, odd	2 Corp	3060	.005	S.F.		.24		.24	.37
5300	For distribution cost over 3 stories high, add per story	"	6100	.003	"		.12		.12	.19

09 21 16.33 Partition Wall

0010 PARTITION WALL Stud wall, 8' to 12' high										
0050	1/2", interior, gypsum board, std, tope & finish 2 sides									
0500	Instolled on ond incl., 2" x 4" wood studs, 16" O.C.	2 Carp	310	.052	S.F.	1.12	2.37		3.49	4.88
1000	Metal studs, NLB, 25 ga., 16" O.C., 3-5/8" wide		350	.046		1.06	2.10		3.16	4.40
1200	6" wide		330	.048		1.20	2.22		3.42	4.75

09 21 Plaster and Gypsum Board Assemblies

09 21 16 – Gypsum Board Assemblies

09 21 16.33 Partition Wall		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1400	Water resistant, on 2" x 4" wood studs, 16" O.C.	2 Carp	310	.052	S.F.	1.28	2.37		3.65	5.05
1600	Metal studs, NLB, 25 ga., 16" O.C., 3-5/8" wide		350	.046		1.22	2.10		3.32	4.58
1800	6" wide		330	.048		1.36	2.22		3.58	4.93
2000	Fire res., 2 layers, 1-1/2 hr., on 2" x 4" wood studs, 16" O.C.		210	.076		1.80	3.49		5.29	7.40
2200	Metal studs, NLB, 25 ga., 16" O.C., 3-5/8" wide		250	.064		1.74	2.93		4.67	6.45
2400	6" wide		230	.070		1.88	3.19		5.07	7
2600	Fire & water res., 2 layers, 1-1/2 hr., 2" x 4" studs, 16" O.C.		210	.076		1.80	3.49		5.29	7.40
2800	Metal studs, NLB, 25 ga., 16" O.C., 3-5/8" wide		250	.064		1.74	2.93		4.67	6.45
3000	6" wide	▼	230	.070	▼	1.88	3.19		5.07	7
3200	5/8", interior, gypsum board, standard, tape & finish 2 sides									
3400	Installed on and including 2" x 4" wood studs, 16" O.C.	2 Carp	300	.053	S.F.	1.16	2.45		3.61	5.05
3600	24" O.C.		330	.048		1.07	2.22		3.29	4.60
3800	Metal studs, NLB, 25 ga., 16" O.C., 3-5/8" wide		340	.047		1.10	2.16		3.26	4.54
4000	6" wide		320	.050		1.24	2.29		3.53	4.91
4200	24" O.C., 3-5/8" wide		360	.044		1.01	2.04		3.05	4.25
4400	6" wide		340	.047		1.11	2.16		3.27	4.55
4800	Water resistant, on 2" x 4" wood studs, 16" O.C.		300	.053		1.42	2.45		3.87	5.35
5000	24" O.C.		330	.048		1.33	2.22		3.55	4.89
5200	Metal studs, NLB, 25 ga. 16" O.C., 3-5/8" wide		340	.047		1.36	2.16		3.52	4.83
5400	6" wide		320	.050		1.50	2.29		3.79	5.20
5600	24" O.C., 3-5/8" wide		360	.044		1.27	2.04		3.31	4.53
5800	6" wide		340	.047		1.37	2.16		3.53	4.84
6000	Fire resistant, 2 layers, 2 hr., on 2" x 4" wood studs, 16" O.C.		205	.078		1.79	3.58		5.37	7.45
6200	24" O.C.		235	.068		1.79	3.12		4.91	6.80
6400	Metal studs, NLB, 25 ga., 16" O.C., 3-5/8" wide		245	.065		1.85	2.99		4.84	6.65
6600	6" wide		225	.071		1.96	3.26		5.22	7.20
6800	24" O.C., 3-5/8" wide		265	.060		1.73	2.77		4.50	6.15
7000	6" wide		245	.065		1.83	2.99		4.82	6.65
7200	Fire & water resistant, 2 layers, 2 hr., 2" x 4" studs, 16" O.C.		205	.078		1.88	3.58		5.46	7.55
7400	24" O.C.		235	.068		1.79	3.12		4.91	6.80
7600	Metal studs, NLB, 25 ga., 16" O.C., 3-5/8" wide		245	.065		1.82	2.99		4.81	6.65
7800	6" wide		225	.071		1.96	3.26		5.22	7.20
8000	24" O.C., 3-5/8" wide		265	.060		1.73	2.77		4.50	6.15
8200	6" wide	▼	245	.065	▼	1.83	2.99		4.82	6.65
8600	1/2" blueboard, mesh tape both sides									
8620	Installed on and including 2" x 4" wood studs, 16" O.C.	2 Carp	300	.053	S.F.	1.16	2.45		3.61	5.05
8640	Metal studs, NLB, 25 ga., 16" O.C., 3-5/8" wide		340	.047		1.10	2.16		3.26	4.54
8660	6" wide		320	.050		1.24	2.29		3.53	4.91
9000	Exterior, 1/2" gypsum sheathing, 1/2" gypsum finished, interior,									
9100	including foil faced insulation, metal studs, 20 ga.									
9200	16" O.C., 3-5/8" wide	2 Carp	290	.055	S.F.	1.70	2.53		4.23	5.75
9400	6" wide		270	.059		1.95	2.72		4.67	6.35
9600	Partitions, for work over 8' high, add	▼	1530	.010	▼		.48		.48	.74

09 22 Supports for Plaster and Gypsum Board

09 22 03 – Fastening Methods for Finishes

		Daily	Labor-			2014 Bare Costs			Total
		Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
09 22 03.20	Drilling Plaster/Drywall								
0010	DRILLING PLASTER/DRYWALL								
1100	Drilling & layout for drywall/plaster walls, up to 1" deep, no anchor								
1200	Holes, 1/4" diameter	1 Carp	150	.053	Ea.	.01	2.45		3.78
1300	3/8" diameter		140	.057		.01	2.62		4.05
1400	1/2" diameter		130	.062		.01	2.82		4.36
1500	3/4" diameter		120	.067		.01	3.06		4.74
1600	1" diameter		110	.073		.02	3.33		5.15
1700	1-1/4" diameter		100	.080		.03	3.67		5.70
1800	1-1/2" diameter		90	.089		.04	4.08		6.35
1900	For ceiling installations, add						40%		

09 22 13 – Metal Furring

09 22 13.13 Metal Channel Furring

0010	METAL CHANNEL FURRING								
0030	Beams and columns, 7/8" channels, galvanized, 12" O.C.	1 Lath	155	.052	S.F.	.37	2.10		3.49
0050	16" O.C.		170	.047		.31	1.91		3.15
0070	24" O.C.		185	.043		.20	1.76		2.80
0100	Ceilings, an steel, 7/8" channels, galvanized, 12" O.C.		210	.038		.34	1.55		2.64
0300	16" O.C.		290	.028		.31	1.12		1.99
0400	24" O.C.		420	.019		.20	.77		1.36
0600	1-5/8" channels, galvanized, 12" O.C.		190	.042		.46	1.71		3.02
0700	16" O.C.		260	.031		.41	1.25		2.30
0900	24" O.C.		390	.021		.28	.83		1.52
0930	7/8" channels with sound isolation clips, 12" O.C.		120	.067		1.72	2.71		5.85
0940	16" O.C.		100	.080		1.29	3.25		6.20
0950	24" O.C.		165	.048		.86	1.97		3.83
0960	1-5/8" channels, galvanized, 12" O.C.		110	.073		1.83	2.95		6.35
0970	16" O.C.		100	.080		1.38	3.25		6.30
0980	24" O.C.		155	.052		.92	2.10		4.09
1000	Walls, 7/8" channels, galvanized, 12" O.C.		235	.034		.34	1.38		2.40
1200	16" O.C.		265	.030		.31	1.23		2.14
1300	24" O.C.		350	.023		.20	.93		1.58
1500	1-5/8" channels, galvanized, 12" O.C.		210	.038		.46	1.55		2.78
1600	16" O.C.		240	.033		.41	1.35		2.45
1800	24" O.C.		305	.026		.28	1.06		1.87
1920	7/8" channels with sound isolation clips, 12" O.C.		125	.064		1.72	2.60		5.70
1940	16" O.C.		100	.080		1.29	3.25		6.20
1950	24" O.C.		150	.053		.86	2.17		4.12
1960	1-5/8" channels, galvanized, 12" O.C.		115	.070		1.83	2.82		6.15
1970	16" O.C.		95	.084		1.38	3.42		6.55
1980	24" O.C.		140	.057		.92	2.32		4.42

09 22 16 – Non-Structural Metal Framing

09 22 16.13 Non-Structural Metal Stud Framing

0010	NON-STRUCTURAL METAL STUD FRAMING								
1600	Non-load bearing, galv., 8' high, 25 ga. 1-5/8" wide, 16" O.C.	1 Carp	619	.013	S.F.	.27	.59		1.21
1610	24" O.C.		950	.008		.20	.39		.83
1620	2-1/2" wide, 16" O.C.		613	.013		.32	.60		1.27
1630	24" O.C.		938	.009		.24	.39		.87
1640	3-5/8" wide, 16" O.C.		600	.013		.39	.61	1	1.36
1650	24" O.C.		925	.009		.29	.40		.93
1660	4" wide, 16" O.C.		594	.013		.42	.62	1.04	1.42
1670	24" O.C.		925	.009		.32	.40	.72	.96
1680	6" wide, 16" O.C.		588	.014		.53	.62	1.15	1.54

09 22 Supports for Plaster and Gypsum Board

09 22 16 – Non-Structural Metal Framing

09 22 16.13 Non-Structural Metal Stud Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1690	24" O.C.	1 Corp	906	.009	S.F.	.40	.40		.80	1.06
1700	20 go. studs, 1-5/8" wide, 16" O.C.		494	.016		.38	.74		1.12	1.56
1710	24" O.C.		763	.010		.28	.48		.76	1.05
1720	2-1/2" wide, 16" O.C.		488	.016		.46	.75		1.21	1.66
1730	24" O.C.		750	.011		.35	.49		.84	1.13
1740	3-5/8" wide, 16" O.C.		481	.017		.50	.76		1.26	1.73
1750	24" O.C.		738	.011		.37	.50		.87	1.18
1760	4" wide, 16" O.C.		475	.017		.60	.77		1.37	1.85
1770	24" O.C.		738	.011		.45	.50		.95	1.27
1780	6" wide, 16" O.C.		469	.017		.76	.78		1.54	2.04
1790	24" O.C.		725	.011		.57	.51		1.08	1.41
2000	Non-load bearing, galv., 10' high, 25 go. 1-5/8" wide, 16" O.C.		495	.016		.26	.74		1	1.42
2100	24" O.C.		760	.011		.19	.48		.67	.96
2200	2-1/2" wide, 16" O.C.		490	.016		.30	.75		1.05	1.49
2250	24" O.C.		750	.011		.22	.49		.71	1
2300	3-5/8" wide, 16" O.C.		480	.017		.36	.76		1.12	1.58
2350	24" O.C.		740	.011		.27	.50		.77	1.06
2400	4" wide, 16" O.C.		475	.017		.40	.77		1.17	1.63
2450	24" O.C.		740	.011		.30	.50		.80	1.08
2500	6" wide, 16" O.C.		470	.017		.50	.78		1.28	1.75
2550	24" O.C.		725	.011		.37	.51		.88	1.19
2600	20 go. studs, 1-5/8" wide, 16" O.C.		395	.020		.36	.93		1.29	1.82
2650	24" O.C.		610	.013		.26	.60		.86	1.22
2700	2-1/2" wide, 16" O.C.		390	.021		.43	.94		1.37	1.93
2750	24" O.C.		600	.013		.32	.61		.93	1.29
2800	3-5/8" wide, 16" OC		385	.021		.47	.95		1.42	1.99
2850	24" O.C.		590	.014		.35	.62		.97	1.34
2900	4" wide, 16" O.C.		380	.021		.57	.97		1.54	2.12
2950	24" O.C.		590	.014		.42	.62		1.04	1.42
3000	6" wide, 16" O.C.		375	.021		.72	.98		1.70	2.30
3050	24" O.C.		580	.014		.53	.63		1.16	1.56
3060	Non-load bearing, galv., 12' high, 25 go. 1-5/8" wide, 16" O.C.		413	.019		.25	.89		1.14	1.64
3070	24" O.C.		633	.013		.18	.58		.76	1.09
3080	2-1/2" wide, 16" O.C.		408	.020		.29	.90		1.19	1.71
3090	24" O.C.		625	.013		.21	.59		.80	1.14
3100	3-5/8" wide, 16" O.C.		400	.020		.35	.92		1.27	1.80
3110	24" O.C.		617	.013		.25	.59		.84	1.20
3120	4" wide, 16" O.C.		396	.020		.38	.93		1.31	1.85
3130	24" O.C.		617	.013		.28	.59		.87	1.23
3140	6" wide, 16" O.C.		392	.020		.48	.94		1.42	1.97
3150	24" O.C.		604	.013		.35	.61		.96	1.32
3160	20 go. studs, 1-5/8" wide, 16" O.C.		329	.024		.34	1.12		1.46	2.09
3170	24" O.C.		508	.016		.25	.72		.97	1.38
3180	2-1/2" wide, 16" O.C.		325	.025		.41	1.13		1.54	2.19
3190	24" O.C.		500	.016		.30	.73		1.03	1.46
3200	3-5/8" wide, 16" O.C.		321	.025		.45	1.14		1.59	2.26
3210	24" O.C.		492	.016		.33	.75		1.08	1.51
3220	4" wide, 16" O.C.		317	.025		.55	1.16		1.71	2.39
3230	24" O.C.		492	.016		.40	.75		1.15	1.59
3240	6" wide, 16" O.C.		313	.026		.69	1.17		1.86	2.57
3250	24" O.C.	▼	483	.017	▼	.50	.76		1.26	1.72
5000	Load bearing studs, see Section 05 41 13.30									

09 22 Supports for Plaster and Gypsum Board

09 22 26 – Suspension Systems

09 22 26.13 Ceiling Suspension Systems		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	CEILING SUSPENSION SYSTEMS for gypsum board or plaster									
8000	Suspended ceilings, including carriers									
8200	1-1/2" carriers, 24" O.C. with:									
8300	7/8" channels, 16" O.C.	1 Lath	275	.029	S.F.	.51	1.18		1.69	2.30
8320	24" O.C.		310	.026		.41	1.05		1.46	1.99
8400	1-5/8" channels, 16" O.C.		205	.039		.62	1.58		2.20	3.01
8420	24" O.C.	▼	250	.032	▼	.48	1.30		1.78	2.44
8600	2" carriers, 24" O.C. with:									
8700	7/8" channels, 16" O.C.	1 Lath	250	.032	S.F.	.56	1.30		1.86	2.52
8720	24" O.C.		285	.028		.45	1.14		1.59	2.18
8800	1-5/8" channels, 16" O.C.		190	.042		.66	1.71		2.37	3.24
8820	24" O.C.	▼	225	.036	▼	.53	1.44		1.97	2.70

09 22 36 – Lath

09 22 36.13 Gypsum Lath

0010	GYPSUM LATH	R092000-50								
0020	Plain or perforated, nailed, 3/8" thick	1 Lath	85	.094	S.Y.	2.70	3.82		6.52	8.55
0100	1/2" thick		80	.100		2.43	4.06		6.49	8.60
0300	Clipped to steel studs, 3/8" thick		75	.107		2.70	4.33		7.03	9.30
0400	1/2" thick		70	.114		2.43	4.64		7.07	9.45
1500	For ceiling installations, add		216	.037			1.50		1.50	2.21
1600	For columns and beams, add	▼	170	.047	▼		1.91		1.91	2.81

09 22 36.23 Metal Lath

0010	METAL LATH	R092000-50								
0020	Diamond, expanded, 2.5 lb. per S.Y., painted				S.Y.	4.24			4.24	4.66
0100	Galvanized					3.05			3.05	3.36
0300	3.4 lb. per S.Y., painted					3.47			3.47	3.82
0400	Galvanized					3.80			3.80	4.18
0600	For 15# asphalt sheathing paper, add					.49			.49	.53
0900	Flat rib, 1/8" high, 2.75 lb., painted					3.26			3.26	3.59
1000	Foil backed					3.14			3.14	3.45
1200	3.4 lb. per S.Y., painted					4.28			4.28	4.71
1300	Galvanized					5.85			5.85	6.40
1500	For 15# asphalt sheathing paper, add					.49			.49	.53
1800	High rib, 3/8" high, 3.4 lb. per S.Y., painted					4.39			4.39	4.83
1900	Galvanized				▼	3.71			3.71	4.08
2400	3/4" high, painted, .60 lb. per S.F.				S.F.	.62			.62	.68
2500	.75 lb. per S.F.				"	1.33			1.33	1.46
2800	Stucco mesh, painted, 3.6 lb.				S.Y.	4.03			4.03	4.43
3000	K-lath, perforated, absorbent paper, regular					4.42			4.42	4.86
3100	Heavy duty					5.20			5.20	5.75
3300	Waterproof, heavy duty, grade B backing					5.10			5.10	5.60
3400	Fire resistant backing					5.65			5.65	6.20
3600	2.5 lb. diamond painted, on wood framing, on walls	1 Lath	85	.094		4.24	3.82		8.06	10.25
3700	On ceilings		75	.107		4.24	4.33		8.57	11
3900	3.4 lb. diamond painted, on wood framing, on walls		80	.100		4.28	4.06		8.34	10.65
4000	On ceilings		70	.114		4.28	4.64		8.92	11.50
4200	3.4 lb. diamond painted, wired to steel framing		75	.107		4.28	4.33		8.61	11.05
4300	On ceilings		60	.133		4.28	5.40		9.68	12.65
4500	Columns and beams, wired to steel		40	.200		4.28	8.10		12.38	16.65
4600	Cornices, wired to steel		35	.229		4.28	9.30		13.58	18.35
4800	Screwed to steel studs, 2.5 lb.	▼	80	.100	▼	4.24	4.06		8.30	10.60

09 22 Supports for Plaster and Gypsum Board

09 22 36 – Lath

09 22 36.23 Metal Lath		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4900	3.4 lb.	1 Lath	75	.107	S.Y.	3.47	4.33		7.80	10.15
5100	Rib lath, pointed, wired to steel, on walls, 2.5 lb.		75	.107		3.26	4.33		7.59	9.95
5200	3.4 lb.		70	.114		4.39	4.64		9.03	11.65
5400	4.0 lb.		65	.123		5.70	5		10.70	13.60
5500	For self-furring lath, add					.11			.11	.12
5700	Suspended ceiling system, incl. 3.4 lb. diamond lath, painted	1 Lath	15	.533		3.58	21.50		25.08	36
5800	Galvanized	"	15	.533		4.53	21.50		26.03	37
6000	Hallow metal stud partitions, 3.4 lb. painted lath both sides									
6010	Non-load bearing, 25 ga., w/rib lath 2-1/2" studs, 12" O.C.	1 Lath	20.30	.394	S.Y.	12.25	16		28.25	37
6300	16" O.C.		21.10	.379		11.50	15.40		26.90	35
6350	24" O.C.		22.70	.352		10.80	14.30		25.10	33
6400	3-5/8" studs, 16" O.C.		19.50	.410		12.05	16.65		28.70	38
6600	24" O.C.		20.40	.392		11.20	15.90		27.10	36
6700	4" studs, 16" O.C.		20.40	.392		12.40	15.90		28.30	37
6900	24" O.C.		21.60	.370		11.45	15.05		26.50	34.50
7000	6" studs, 16" O.C.		19.50	.410		13.30	16.65		29.95	39
7100	24" O.C.		21.10	.379		12.10	15.40		27.50	36
7200	L.B. partitions, 16 ga., w/rib lath, 2-1/2" studs, 16" O.C.		20	.400		12.45	16.25		28.70	37.50
7300	3-5/8" studs, 16 ga.		19.70	.406		14.15	16.50		30.65	39.50
7500	4" studs, 16 ga.		19.50	.410		14.70	16.65		31.35	40.50
7600	6" studs, 16 ga.		18.70	.428		17.35	17.35		34.70	44.50

09 22 36.43 Security Mesh

0010	SECURITY MESH, expanded metal, flat, screwed to framing									
0100	On walls, 3/4", 1.76 lb./S.F.	2 Carp	1500	.011	S.F.	1.77	.49		2.26	2.70
0110	1-1/2", 1.14 lb./S.F.		1600	.010		1.52	.46		1.98	2.38
0200	On ceilings, 3/4", 1.76 lb./S.F.		1350	.012		1.77	.54		2.31	2.79
0210	1-1/2", 1.14 lb./S.F.		1450	.011		1.52	.51		2.03	2.45

09 22 36.83 Accessories, Plaster

0010	ACCESSORIES, PLASTER									
0020	Casing bead, expanded flange, galvanized	1 Lath	2.70	2.963	C.L.F.	50.50	120		170.50	233
0200	Foundation weep screed, galvanized	"	2.70	2.963		52	120		172	234
0900	Channels, cold rolled, 16 ga., 3/4" deep, galvanized					34			34	37.50
1200	1-1/2" deep, 16 ga., galvanized					46			46	50.50
1620	Corner bead, expanded bullnose, 3/4" radius, #10, galvanized	1 Lath	2.60	3.077		25	125		150	212
1650	#1, galvanized		2.55	3.137		44	127		171	236
1670	Expanded wing, 2-3/4" wide, #1, galvanized		2.65	3.019		37	123		160	221
1700	Inside corner (corner rite), 3" x 3", painted		2.60	3.077		21	125		146	208
1750	Strip-ex, 4" wide, painted		2.55	3.137		37	127		164	228
1800	Expansion joint, 3/4" grounds, limited expansion, galv., 1 piece		2.70	2.963		81.50	120		201.50	267
2100	Extreme expansion, galvanized, 2 piece		2.60	3.077		149	125		274	350

09 23 Gypsum Plastering

09 23 13 – Acoustical Gypsum Plastering

09 23 13.10 Perlite or Vermiculite Plaster		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	PERLITE OR VERMICULITE PLASTER	R092000-50								
0020	In 100 lb. bags, under 200 bags				Bog	16.65			16.65	18.30
0100	Over 200 bags				"	15.80			15.80	17.40
0300	2 coats, no loth included, on walls	J-1	92	.435	S.Y.	3.78	17.40	1.56	22.74	32
0400	On ceilings	"	79	.506		3.78	20.50	1.82	26.10	36.50
0600	On ond incl. 3/8" gypsum loth, on metal studs	J-2	84	.571		7.50	23	1.71	32.21	44.50
0700	On ceilings	"	70	.686		7.50	27.50	2.05	37.05	52
0900	3 coats, no loth included, on walls	J-1	74	.541		6.30	21.50	1.94	29.74	41.50
1000	On ceilings	"	63	.635		6.30	25.50	2.28	34.08	48
1200	On ond incl. pointed metal loth, on metal studs	J-2	72	.667		10.70	27	1.99	39.69	54
1300	On ceilings		61	.787		10.70	31.50	2.35	44.55	62
1500	On ond incl. suspended metal loth ceiling		37	1.297		9.90	52	3.88	65.78	93
1700	For irregular or curved surfaces, odd to above						30%			
1800	For columns and beams, odd to above						50%			
1900	For soffits, odd to ceiling prices						40%			

09 23 20 – Gypsum Plaster

09 23 20.10 Gypsum Plaster On Walls and Ceilings

0010	GYPSUM PLASTER ON WALLS AND CEILINGS	R092000-50								
0020	80# bog, less than 1 ton				Bog	14.45			14.45	15.85
0100	Over 1 ton				"	12.70			12.70	13.95
0300	2 coats, no loth included, on walls	J-1	105	.381	S.Y.	3.37	15.25	1.37	19.99	28
0400	On ceilings	"	92	.435		3.37	17.40	1.56	22.33	31.50
0600	On ond incl. 3/8" gypsum loth on steel, on walls	J-2	97	.495		6.05	19.85	1.48	27.38	38.50
0700	On ceilings	"	83	.578		6.05	23	1.73	30.78	43.50
0900	3 coats, no loth included, on walls	J-1	87	.460		4.82	18.40	1.65	24.87	34.50
1000	On ceilings	"	78	.513		4.82	20.50	1.84	27.16	38.50
1200	On ond including pointed metal loth, on wood studs	J-2	86	.558		9.55	22.50	1.67	33.72	46
1300	On ceilings	"	76.50	.627		9.55	25	1.88	36.43	50.50
1600	For irregular or curved surfaces, odd						30%			
1800	For columns & beams, odd						50%			

09 23 20.20 Gauging Plaster

0010	GAUGING PLASTER	R092000-50								
0020	100 lb. bags, less than 1 ton				Bog	19.60			19.60	21.50
0100	Over 1 ton				"	17.95			17.95	19.75

09 23 20.30 Keenes Cement

0010	KEENES CEMENT	R092000-50								
0020	In 100 lb. bags, less than 1 ton				Bog	20.50			20.50	22.50
0100	Over 1 ton				"	19.35			19.35	21.50
0300	Finish only, odd to plaster prices, stordord	J-1	215	.186	S.Y.	1.86	7.45	.67	9.98	14
0400	High quality	"	144	.278	"	1.88	11.15	1	14.03	19.90

09 24 Cement Plastering

09 24 23 – Cement Stucco

09 24 23.40 Stucco		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	STUCCO									
	R092000-50									
0015	3 coats 1" thick, float finish, with mesh, on wood frame	J-2	63	.762	S.Y.	6.55	30.50	2.28	39.33	55.50
0100	On masonry construction, no mesh incl.	J-1	67	.597		2.50	24	2.14	28.64	41
0300	For trowel finish, add	1 Plas	170	.047			1.97		1.97	2.97
0400	For 3/4" thick, on masonry, deduct	J-1	880	.045		.62	1.82	.16	2.60	3.60
0600	For coloring and special finish, odd, minimum		685	.058		.39	2.34	.21	2.94	4.18
0700	Maximum	▼	200	.200		1.38	8	.72	10.10	14.35
0900	For soffits, odd	J-2	155	.310		2.14	12.45	.93	15.52	22
1000	Exterior stucco, with bonding agent, 3 coats, on walls, no mesh incl.	J-1	200	.200		3.58	8	.72	12.30	16.80
1200	Ceilings		180	.222		3.58	8.90	.80	13.28	18.20
1300	Beams		80	.500		3.58	20	1.80	25.38	36
1500	Columns		100	.400		3.58	16	1.44	21.02	29.50
1600	Mesh, pointed, nailed to wood, 1.8 lb.	1 Loth	60	.133		6.20	5.40		11.60	14.75
1800	3.6 lb.		55	.145		4.03	5.90		9.93	13.15
1900	Wired to steel, pointed, 1.8 lb.		53	.151		6.20	6.15		12.35	15.80
2100	3.6 lb.	▼	50	.160	▼	4.03	6.50		10.53	14

09 25 Other Plastering

09 25 23 – Lime Based Plastering

09 25 23.10 Venetian Plaster

0010	VENETIAN PLASTER									
0100	Walls, 1 coat primer, roller applied	1 Plas	950	.008	S.F.	.16	.35		.51	.71
0200	Plaster, 3 coats, incl. sanding	2 Plas	700	.023	"	.44	.96		1.40	1.93
0210	For pigment, light colors add per gal. plaster				Gal.	12			12	13.20
0220	For pigment, dark colors add				"	50			50	55
0300	For sealer/wax coat incl. burnishing, odd	1 Plas	300	.027	S.F.	.41	1.12		1.53	2.13

09 26 Veneer Plastering

09 26 13 – Gypsum Veneer Plastering

09 26 13.20 Blueboard

0010	BLUEBOARD For use with thin coat									
0100	plaster application see Section 09 26 13.80									
1000	3/8" thick, on walls or ceilings, standard, no finish included	2 Corp	1900	.008	S.F.	.31	.39		.70	.94
1100	With thin coat plaster finish		875	.018		.41	.84		1.25	1.74
1400	On beams, columns, or soffits, standard, no finish included		675	.024		.36	1.09		1.45	2.07
1450	With thin coat plaster finish		475	.034		.46	1.54		2	2.88
3000	1/2" thick, on walls or ceilings, standard, no finish included		1900	.008		.31	.39		.70	.94
3100	With thin coat plaster finish		875	.018		.41	.84		1.25	1.74
3300	Fire resistant, no finish included		1900	.008		.31	.39		.70	.94
3400	With thin coat plaster finish		875	.018		.41	.84		1.25	1.74
3450	On beams, columns, or soffits, standard, no finish included		675	.024		.36	1.09		1.45	2.07
3500	With thin coat plaster finish		475	.034		.46	1.54		2	2.88
3700	Fire resistant, no finish included		675	.024		.36	1.09		1.45	2.07
3800	With thin coat plaster finish		475	.034		.46	1.54		2	2.88
5000	5/8" thick, on walls or ceilings, fire resistant, no finish included		1900	.008		.33	.39		.72	.96
5100	With thin coat plaster finish		875	.018		.43	.84		1.27	1.76
5500	On beams, columns, or soffits, no finish included		675	.024		.38	1.09		1.47	2.10
5600	With thin coat plaster finish		475	.034		.48	1.54		2.02	2.91
6000	For high ceilings, over 8' high, odd		3060	.005			.24		.24	.37

09 26 Veneer Plastering

09 26 13 – Gypsum Veneer Plastering

		Daily	Labor-			2014 Bare Costs			Total	Total
		Crew	Output	Hours	Unit	Material	Labor	Equipment		Incl O&P
09 26 13.20 Blueboard										
6500	For over 3 stories high, odd per story	2 Corp	6100	.003	S.F.		.12		.12	.19
09 26 13.80 Thin Coat Plaster										
0010	THIN COAT PLASTER									
0012	1 coat veneer, not incl. loth	J-1	3600	.011	S.F.	.10	.45	.04	.59	.82
1000	In 50 lb. bags				Bag	13.70			13.70	15.10

09 28 Backing Boards and Underlayments

09 28 13 – Cementitious Backing Boards

09 28 13.10 Cementitious Backerboard

0010	CEMENTITIOUS BACKERBOARD									
0070	Cementitious backerboard, on floor, 3' x 4' x 1/2" sheets	2 Corp	525	.030	S.F.	.80	1.40		2.20	3.04
0080	3' x 5' x 1/2" sheets		525	.030		.74	1.40		2.14	2.98
0090	3' x 6' x 1/2" sheets		525	.030		.74	1.40		2.14	2.97
0100	3' x 4' x 5/8" sheets		525	.030		1.02	1.40		2.42	3.28
0110	3' x 5' x 5/8" sheets		525	.030		.99	1.40		2.39	3.24
0120	3' x 6' x 5/8" sheets		525	.030		.96	1.40		2.36	3.22
0150	On wall, 3' x 4' x 1/2" sheets		350	.046		.80	2.10		2.90	4.11
0160	3' x 5' x 1/2" sheets		350	.046		.74	2.10		2.84	4.05
0170	3' x 6' x 1/2" sheets		350	.046		.74	2.10		2.84	4.04
0180	3' x 4' x 5/8" sheets		350	.046		1.02	2.10		3.12	4.35
0190	3' x 5' x 5/8" sheets		350	.046		.99	2.10		3.09	4.31
0200	3' x 6' x 5/8" sheets		350	.046		.96	2.10		3.06	4.29
0250	On counter, 3' x 4' x 1/2" sheets		180	.089		.80	4.08		4.88	7.20
0260	3' x 5' x 1/2" sheets		180	.089		.74	4.08		4.82	7.10
0270	3' x 6' x 1/2" sheets		180	.089		.74	4.08		4.82	7.10
0300	3' x 4' x 5/8" sheets		180	.089		1.02	4.08		5.10	7.40
0310	3' x 5' x 5/8" sheets		180	.089		.99	4.08		5.07	7.40
0320	3' x 6' x 5/8" sheets		180	.089		.96	4.08		5.04	7.35

09 29 Gypsum Board

09 29 10 – Gypsum Board Panels

09 29 10.30 Gypsum Board

0010	GYPSUM BOARD on walls & ceilings	R092910-10								
0100	Noiled or screwed to studs unless otherwise noted									
0110	1/4" thick, on walls or ceilings, stondord, no finish included	2 Corp	1330	.012	S.F.	.31	.55		.86	1.19
0115	1/4" thick, on walls or ceilings, flexible, no finish included		1050	.015		.47	.70		1.17	1.60
0117	1/4" thick, on columns or soffits, flexible, no finish included		1050	.015		.47	.70		1.17	1.60
0130	1/4" thick, stondord, no finish included, less than 800 S.F.		510	.031		.31	1.44		1.75	2.56
0150	3/8" thick, on walls, stondord, no finish included		2000	.008		.31	.37		.68	.91
0200	On ceilings, stondord, no finish included		1800	.009		.31	.41		.72	.97
0250	On beams, columns, or soffits, no finish included		675	.024		.31	1.09		1.40	2.02
0300	1/2" thick, on walls, stondord, no finish included		2000	.008		.30	.37		.67	.90
0350	Toped ond finished (level 4 finish)		965	.017		.35	.76		1.11	1.55
0390	With compound skim coat (level 5 finish)		775	.021		.41	.95		1.36	1.91
0400	Fire resistont, no finish included		2000	.008		.32	.37		.69	.92
0450	Toped ond finished (level 4 finish)		965	.017		.37	.76		1.13	1.58
0490	With compound skim coat (level 5 finish)		775	.021		.43	.95		1.38	1.93
0500	Water resistant, no finish included		2000	.008		.38	.37		.75	.99
0550	Toped ond finished (level 4 finish)		965	.017		.43	.76		1.19	1.64

09 29 Gypsum Board

09 29 10 – Gypsum Board Panels

09 29 10.30 Gypsum Board		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0590	With compound skim coat (level 5 finish)	2 Carp	775	.021	S.F.	.49	.95		1.44	1.99
0600	Prefinished, vinyl, clipped to studs		900	.018		.48	.82		1.30	1.79
0700	Mold resistant, no finish included		2000	.008		.40	.37		.77	1.01
0710	Taped and finished (level 4 finish)		965	.017		.45	.76		1.21	1.66
0720	With compound skim coat (level 5 finish)		775	.021		.51	.95		1.46	2.02
1000	On ceilings, standard, no finish included		1800	.009		.30	.41		.71	.96
1050	Taped and finished (level 4 finish)		765	.021		.35	.96		1.31	1.86
1090	With compound skim coat (level 5 finish)		610	.026		.41	1.20		1.61	2.31
1100	Fire resistant, no finish included		1800	.009		.32	.41		.73	.98
1150	Taped and finished (level 4 finish)		765	.021		.37	.96		1.33	1.89
1195	With compound skim coat (level 5 finish)		610	.026		.43	1.20		1.63	2.33
1200	Water resistant, no finish included		1800	.009		.38	.41		.79	1.05
1250	Taped and finished (level 4 finish)		765	.021		.43	.96		1.39	1.95
1290	With compound skim coat (level 5 finish)		610	.026		.49	1.20		1.69	2.39
1310	Mold resistant, no finish included		1800	.009		.40	.41		.81	1.07
1320	Taped and finished (level 4 finish)		765	.021		.45	.96		1.41	1.97
1330	With compound skim coat (level 5 finish)		610	.026		.51	1.20		1.71	2.42
1350	Sog resistant, no finish included		1600	.010		.32	.46		.78	1.06
1360	Taped and finished (level 4 finish)		765	.021		.37	.96		1.33	1.89
1370	With compound skim coat (level 5 finish)		610	.026		.43	1.20		1.63	2.33
1500	On beams, columns, or soffits, standard, no finish included		675	.024		.35	1.09		1.44	2.06
1550	Taped and finished (level 4 finish)		540	.030		.35	1.36		1.71	2.48
1590	With compound skim coat (level 5 finish)		475	.034		.41	1.54		1.95	2.83
1600	Fire resistant, no finish included		675	.024		.32	1.09		1.41	2.03
1650	Taped and finished (level 4 finish)		540	.030		.37	1.36		1.73	2.51
1690	With compound skim coat (level 5 finish)		475	.034		.43	1.54		1.97	2.85
1700	Water resistant, no finish included		675	.024		.44	1.09		1.53	2.16
1750	Taped and finished (level 4 finish)		540	.030		.43	1.36		1.79	2.57
1790	With compound skim coat (level 5 finish)		475	.034		.49	1.54		2.03	2.91
1800	Mold resistant, no finish included		675	.024		.46	1.09		1.55	2.19
1810	Taped and finished (level 4 finish)		540	.030		.45	1.36		1.81	2.59
1820	With compound skim coat (level 5 finish)		475	.034		.51	1.54		2.05	2.94
1850	Sog resistant, no finish included		675	.024		.37	1.09		1.46	2.08
1860	Taped and finished (level 4 finish)		540	.030		.37	1.36		1.73	2.51
1870	With compound skim coat (level 5 finish)		475	.034		.43	1.54		1.97	2.85
2000	5/8" thick, on walls, standard, no finish included		2000	.008		.32	.37		.69	.92
2050	Taped and finished (level 4 finish)		965	.017		.37	.76		1.13	1.58
2090	With compound skim coat (level 5 finish)		775	.021		.43	.95		1.38	1.93
2100	Fire resistant, no finish included		2000	.008		.34	.37		.71	.94
2150	Taped and finished (level 4 finish)		965	.017		.39	.76		1.15	1.60
2195	With compound skim coat (level 5 finish)		775	.021		.45	.95		1.40	1.95
2200	Water resistant, no finish included		2000	.008		.45	.37		.82	1.07
2250	Taped and finished (level 4 finish)		965	.017		.50	.76		1.26	1.72
2290	With compound skim coat (level 5 finish)		775	.021		.56	.95		1.51	2.07
2300	Prefinished, vinyl, clipped to studs		900	.018		.89	.82		1.71	2.24
2510	Mold resistant, no finish included		2000	.008		.45	.37		.82	1.07
2520	Taped and finished (level 4 finish)		965	.017		.50	.76		1.26	1.72
2530	With compound skim coat (level 5 finish)		775	.021		.56	.95		1.51	2.07
3000	On ceilings, standard, no finish included		1800	.009		.32	.41		.73	.98
3050	Taped and finished (level 4 finish)		765	.021		.37	.96		1.33	1.89
3090	With compound skim coat (level 5 finish)		615	.026		.43	1.19		1.62	2.31
3100	Fire resistant, no finish included		1800	.009		.34	.41		.75	1
3150	Taped and finished (level 4 finish)		765	.021		.39	.96		1.35	1.91

09 29 Gypsum Board

09 29 10 – Gypsum Board Panels

09 29 10.30 Gypsum Board		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3190	With compound skim coat (level 5 finish)	2 Carp	615	.026	S.F.	.45	1.19		1.64	2.33
3200	Water resistant, no finish included		1800	.009		.45	.41		.86	1.13
3250	Taped and finished (level 4 finish)		765	.021		.50	.96		1.46	2.03
3290	With compound skim coat (level 5 finish)		615	.026		.56	1.19		1.75	2.45
3300	Mold resistant, no finish included		1800	.009		.45	.41		.86	1.13
3310	Taped and finished (level 4 finish)		765	.021		.50	.96		1.46	2.03
3320	With compound skim coat (level 5 finish)		615	.026		.56	1.19		1.75	2.45
3500	On beams, columns, or soffits, no finish included		675	.024		.37	1.09		1.46	2.08
3550	Taped and finished (level 4 finish)		475	.034		.43	1.54		1.97	2.85
3590	With compound skim coat (level 5 finish)		380	.042		.49	1.93		2.42	3.52
3600	Fire resistant, no finish included		675	.024		.39	1.09		1.48	2.11
3650	Taped and finished (level 4 finish)		475	.034		.45	1.54		1.99	2.87
3690	With compound skim coat (level 5 finish)		380	.042		.45	1.93		2.38	3.47
3700	Water resistant, no finish included		675	.024		.52	1.09		1.61	2.25
3750	Taped and finished (level 4 finish)		475	.034		.56	1.54		2.10	2.99
3790	With compound skim coat (level 5 finish)		380	.042		.57	1.93		2.50	3.61
3800	Mold resistant, no finish included		675	.024		.52	1.09		1.61	2.25
3810	Taped and finished (level 4 finish)		475	.034		.56	1.54		2.10	2.99
3820	With compound skim coat (level 5 finish)		380	.042		.57	1.93		2.50	3.61
4000	Fireproofing, beams or columns, 2 layers, 1/2" thick, incl finish		330	.048		.74	2.22		2.96	4.24
4010	Mold resistant		330	.048		.90	2.22		3.12	4.42
4050	5/8" thick		300	.053		.78	2.45		3.23	4.63
4060	Mold resistant		300	.053		1	2.45		3.45	4.87
4100	3 layers, 1/2" thick		225	.071		1.11	3.26		4.37	6.25
4110	Mold resistant		225	.071		1.35	3.26		4.61	6.55
4150	5/8" thick		210	.076		1.17	3.49		4.66	6.70
4160	Mold resistant		210	.076		1.50	3.49		4.99	7.05
5050	For 1" thick coreboard on columns		480	.033		.74	1.53		2.27	3.17
5100	For foil-backed board, add					.15			.15	.17
5200	For work over 8' high, add	2 Carp	3060	.005			.24		.24	.37
5270	For textured spray, add	2 Lath	1600	.010		.04	.41		.45	.64
5300	For distribution cost over 3 stories high, add per story	2 Carp	6100	.003			.12		.12	.19
5350	For finishing inner corners, add		950	.017	L.F.	.11	.77		.88	1.31
5355	For finishing outer corners, add		1250	.013		.23	.59		.82	1.17
5500	For acoustical sealant, add per bead	1 Carp	500	.016		.04	.73		.77	1.18
5550	Sealant, 1 quart tube				Ea.	7.05			7.05	7.80
6000	Gypsum sound dampening panels									
6010	1/2" thick on walls, multi-layer, light weight, no finish included	2 Carp	1500	.011	S.F.	1.87	.49		2.36	2.81
6015	Taped and finished (level 4 finish)		725	.022		1.92	1.01		2.93	3.67
6020	With compound skim coat (level 5 finish)		580	.028		1.98	1.27		3.25	4.12
6025	5/8" thick on walls, for wood studs, no finish included		1500	.011		2.70	.49		3.19	3.72
6030	Taped and finished (level 4 finish)		725	.022		2.75	1.01		3.76	4.58
6035	With compound skim coat (level 5 finish)		580	.028		2.81	1.27		4.08	5.05
6040	For metal stud, no finish included		1500	.011		2.06	.49		2.55	3.02
6045	Taped and finished (level 4 finish)		725	.022		2.11	1.01		3.12	3.88
6050	With compound skim coat (level 5 finish)		580	.028		2.17	1.27		3.44	4.33
6055	Abuse resist, no finish included		1500	.011		3.75	.49		4.24	4.88
6060	Taped and finished (level 4 finish)		725	.022		3.80	1.01		4.81	5.75
6065	With compound skim coat (level 5 finish)		580	.028		3.86	1.27		5.13	6.20
6070	Shear rated, no finish included		1500	.011		4.30	.49		4.79	5.50
6075	Taped and finished (level 4 finish)		725	.022		4.35	1.01		5.36	6.35
6080	With compound skim coat (level 5 finish)		580	.028		4.41	1.27		5.68	6.80
6085	For SCIF applications, no finish included		1500	.011		4.72	.49		5.21	5.95

09 29 Gypsum Board

09 29 10 – Gypsum Board Panels

09 29 10.30 Gypsum Board		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6090	Taped and finished (level 4 finish)	2 Carp	725	.022	S.F.	4.77	1.01		5.78	6.80
6095	With compound skim coat (level 5 finish)		580	.028		4.83	1.27		6.10	7.25
6100	1-3/8" thick on walls, THX Certified, no finish included		1500	.011		8.40	.49		8.89	10
6105	Taped and finished (level 4 finish)		725	.022		8.45	1.01		9.46	10.85
6110	With compound skim coat (level 5 finish)		580	.028		8.50	1.27		9.77	11.30
6115	5/8" thick on walls, score & snap installation, no finish included		2000	.008		1.78	.37		2.15	2.53
6120	Taped and finished (level 4 finish)		965	.017		1.83	.76		2.59	3.18
6125	With compound skim coat (level 5 finish)		775	.021		1.89	.95		2.84	3.53
7020	5/8" thick on ceilings, for wood joists, no finish included		1200	.013		2.70	.61		3.31	3.91
7025	Taped and finished (level 4 finish)		510	.031		2.75	1.44		4.19	5.25
7030	With compound skim coat (level 5 finish)		410	.039		2.81	1.79		4.60	5.85
7035	For metal joists, no finish included		1200	.013		2.06	.61		2.67	3.21
7040	Taped and finished (level 4 finish)		510	.031		2.11	1.44		3.55	4.54
7045	With compound skim coat (level 5 finish)		410	.039		2.17	1.79		3.96	5.15
7050	Abuse resist, no finish included		1200	.013		3.75	.61		4.36	5.05
7055	Taped and finished (level 4 finish)		510	.031		3.80	1.44		5.24	6.40
7060	With compound skim coat (level 5 finish)		410	.039		3.86	1.79		5.65	7
7065	Shear rated, no finish included		1200	.013		4.30	.61		4.91	5.65
7070	Taped and finished (level 4 finish)		510	.031		4.35	1.44		5.79	7
7075	With compound skim coat (level 5 finish)		410	.039		4.41	1.79		6.20	7.60
7080	For SCIF applications, no finish included		1200	.013		4.72	.61		5.33	6.15
7085	Taped and finished (level 4 finish)		510	.031		4.77	1.44		6.21	7.45
7090	With compound skim coat (level 5 finish)		410	.039		4.83	1.79		6.62	8.05
8010	5/8" thick on ceilings, score & snap installation, no finish included		1600	.010		1.78	.46		2.24	2.67
8015	Taped and finished (level 4 finish)		680	.024		1.83	1.08		2.91	3.67
8020	With compound skim coat (level 5 finish)		545	.029		1.89	1.35		3.24	4.15

09 29 10.50 High Abuse Gypsum Board

0010	HIGH ABUSE GYPSUM BOARD , fiber reinforced, nailed or									
0100	screwed to studs unless otherwise noted									
0110	1/2" thick, on walls, no finish included	2 Carp	1800	.009	S.F.	.61	.41		1.02	1.30
0120	Taped and finished (level 4 finish)		870	.018		.66	.84		1.50	2.03
0130	With compound skim coat (level 5 finish)		700	.023		.72	1.05		1.77	2.41
0150	On ceilings, no finish included		1620	.010		.61	.45		1.06	1.37
0160	Taped and finished (level 4 finish)		690	.023		.66	1.06		1.72	2.37
0170	With compound skim coat (level 5 finish)		550	.029		.72	1.33		2.05	2.85
0210	5/8" thick, on walls, no finish included		1800	.009		.77	.41		1.18	1.48
0220	Taped and finished (level 4 finish)		870	.018		.82	.84		1.66	2.20
0230	With compound skim coat (level 5 finish)		700	.023		.88	1.05		1.93	2.58
0250	On ceilings, no finish included		1620	.010		.77	.45		1.22	1.55
0260	Taped and finished (level 4 finish)		690	.023		.82	1.06		1.88	2.54
0270	With compound skim coat (level 5 finish)		550	.029		.88	1.33		2.21	3.02
0310	5/8" thick, on walls, very high impact, no finish included		1800	.009		.99	.41		1.40	1.72
0320	Taped and finished (level 4 finish)		870	.018		1.04	.84		1.88	2.44
0330	With compound skim coat (level 5 finish)		700	.023		1.10	1.05		2.15	2.82
0350	On ceilings, no finish included		1620	.010		.99	.45		1.44	1.79
0360	Taped and finished (level 4 finish)		690	.023		1.04	1.06		2.10	2.78
0370	With compound skim coat (level 5 finish)		550	.029		1.10	1.33		2.43	3.26
0400	High abuse, gypsum core, paper face									
0410	1/2" thick, on walls, no finish included	2 Carp	1800	.009	S.F.	.57	.41		.98	1.26
0420	Taped and finished (level 4 finish)		870	.018		.62	.84		1.46	1.98
0430	With compound skim coat (level 5 finish)		700	.023		.68	1.05		1.73	2.36
0450	On ceilings, no finish included		1620	.010		.57	.45		1.02	1.33

09 29 Gypsum Board

09 29 10 – Gypsum Board Panels

09 29 10.50 High Abuse Gypsum Board		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0460	Taped and finished (level 4 finish)	2 Carp	690	.023	S.F.	.62	1.06		1.68	2.32
0470	With compound skim coat (level 5 finish)		550	.029		.68	1.33		2.01	2.80
0510	5/8" thick, on walls, no finish included		1800	.009		.77	.41		1.18	1.48
0520	Taped and finished (level 4 finish)		870	.018		.82	.84		1.66	2.20
0530	With compound skim coat (level 5 finish)		700	.023		.88	1.05		1.93	2.58
0550	On ceilings, no finish included		1620	.010		.77	.45		1.22	1.55
0560	Taped and finished (level 4 finish)		690	.023		.82	1.06		1.88	2.54
0570	With compound skim coat (level 5 finish)		550	.029		.88	1.33		2.21	3.02
1000	For high ceilings, over 8' high, add		2750	.006			.27		.27	.41
1010	For distribution cast over 3 stories high, add per story		5500	.003			.13		.13	.21

09 29 15 – Gypsum Board Accessories

09 29 15.10 Accessories, Gypsum Board										
0010	ACCESSORIES, GYPSUM BOARD									
0020	Casing bead, galvanized steel	1 Carp	2.90	2.759	C.L.F.	24.50	126		150.50	222
0100	Vinyl		3	2.667		22	122		144	213
0300	Corner bead, galvanized steel, 1" x 1"		4	2		15.15	91.50		106.65	159
0400	1-1/4" x 1-1/4"		3.50	2.286		16	105		121	180
0600	Vinyl		4	2		16.25	91.50		107.75	160
0900	Furring channel, galv. steel, 7/8" deep, standard		2.60	3.077		32.50	141		173.50	254
1000	Resilient		2.55	3.137		29	144		173	254
1100	J trim, galvanized steel, 1/2" wide		3	2.667		21.50	122		143.50	213
1120	5/8" wide		2.95	2.712		27.50	124		151.50	222
1140	L trim, galvanized		3	2.667		21.50	122		143.50	213
1150	U trim, galvanized		2.95	2.712		29	124		153	224
1160	Screws #6 x 1" A				M	9.45			9.45	10.40
1170	#6 x 1-5/8" A				"	13.65			13.65	15
1200	For stud partitions, see Section 05 41 13.30 and 09 22 16.13									
1500	Z stud, galvanized steel, 1-1/2" wide	1 Carp	2.60	3.077	C.L.F.	36	141		177	258
1600	2" wide	"	2.55	3.137	"	60.50	144		204.50	289

09 30 Tiling

09 30 13 – Ceramic Tiling

09 30 13.10 Ceramic Tile										
0010	CERAMIC TILE									
0020	Backsplash, thinset, average grade tiles	1 Tilf	50	.160	S.F.	2.45	6.70		9.15	12.60
0022	Custom grade tiles		50	.160		4.90	6.70		11.60	15.30
0024	Luxury grade tiles		50	.160		9.80	6.70		16.50	20.50
0026	Economy grade tiles		50	.160		2.24	6.70		8.94	12.35
0050	Base, using 1' x 4" high pc. with 1" x 1" tiles, mud set	D-7	82	.195	L.F.	5.15	7.35		12.50	16.45
0100	Thin set	"	128	.125		4.77	4.70		9.47	12.20
0300	For 6" high base, 1" x 1" tile face, add					.76			.76	.84
0400	For 2" x 2" tile face, add to above					.41			.41	.45
0600	Cove base, 4-1/4" x 4-1/4" high, mud set	D-7	91	.176		3.88	6.60		10.48	14
0700	Thin set		128	.125		3.95	4.70		8.65	11.30
0900	6" x 4-1/4" high, mud set		100	.160		4.05	6		10.05	13.30
1000	Thin set		137	.117		3.93	4.39		8.32	10.75
1200	Sanitary cove base, 6" x 4-1/4" high, mud set		93	.172		4.11	6.45		10.56	14.10
1300	Thin set		124	.129		3.99	4.85		8.84	11.55
1500	6" x 6" high, mud set		84	.190		5.10	7.15		12.25	16.15
1600	Thin set		117	.137		4.96	5.15		10.11	13.05

09 30 Tiling

09 30 13 – Ceramic Tiling

09 30 13.10 Ceramic Tile		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1800	Bothroom accessories, overage (soop dish, tooth brush holder)	D-7	82	.195	Eo.	12	7.35		19.35	24
1900	Bothtub, 5', rec. 4-1/4" x 4-1/4" tile woinscot, adhesive set 6' high		2.90	5.517		156	207		363	475
2100	7' high woinscot		2.50	6.400		179	241		420	550
2200	8' high woinscot		2.20	7.273	▼	190	273		463	615
2400	Bullnose trim, 4-1/4" x 4-1/4", mud set		82	.195	L.F.	3.81	7.35		11.16	15
2500	Thin set		128	.125		3.73	4.70		8.43	11.05
2700	2" x 6" bullnose trim, mud set		84	.190		4.27	7.15		11.42	15.25
2800	Thin set		124	.129		4.21	4.85		9.06	11.80
3000	Floors, notural cloy, rondon or uniform, thin set, color group 1		183	.087	S.F.	4.15	3.29		7.44	9.40
3100	Color group 2		183	.087		5.85	3.29		9.14	11.30
3255	Floors, glozed, thin set, 6" x 6", color group 1		300	.053		4.45	2.01		6.46	7.85
3260	8" x 8" tile		300	.053		4.45	2.01		6.46	7.85
3270	12" x 12" tile		290	.055		5.85	2.07		7.92	9.50
3280	16" x 16" tile		280	.057		6.70	2.15		8.85	10.55
3281	18" x 18" tile		270	.059		8.15	2.23		10.38	12.30
3282	20" x 20" tile		260	.062		9.30	2.31		11.61	13.60
3283	24" x 24" tile		250	.064		10.60	2.41		13.01	15.20
3285	Border, 6" x 12" tile		200	.080		15.25	3.01		18.26	21
3290	3" x 12" tile		200	.080		38.50	3.01		41.51	46.50
3300	Porcelain type, 1 color, color group 2, 1" x 1"		183	.087		5.20	3.29		8.49	10.55
3310	2" x 2" or 2" x 1", thin set	▼	190	.084		5.95	3.17		9.12	11.20
3350	For rondon blend, 2 colors, odd					1			1	1.10
3360	4 colors, odd					1.50			1.50	1.65
3370	For color group 3, odd					.65			.65	.72
3380	For obrosive non-slip tile, odd					.44			.44	.48
4300	Speciolty tile, 4-1/4" x 4-1/4" x 1/2", decorotor finish	D-7	183	.087		10.40	3.29		13.69	16.30
4500	Add for epoxy grout, 1/16" joint, 1" x 1" tile		800	.020		.66	.75		1.41	1.84
4600	2" x 2" tile	▼	820	.020	▼	.61	.73		1.34	1.75
4800	PregROUTed sheets, wolls, 4-1/4" x 4-1/4", 6" x 4-1/4"									
4810	ond 8-1/2" x 4-1/4", 4 S.F. sheets, silicone grout	D-7	240	.067	S.F.	5.05	2.51		7.56	9.25
5100	Floors, unglozed, 2 S.F. sheets,									
5110	Urethane adhesive	D-7	180	.089	S.F.	5.05	3.34		8.39	10.50
5400	Wolls, interior, thin set, 4-1/4" x 4-1/4" tile		190	.084		2.26	3.17		5.43	7.15
5500	6" x 4-1/4" tile		190	.084		2.92	3.17		6.09	7.90
5700	8-1/2" x 4-1/4" tile		190	.084		4.86	3.17		8.03	10
5800	6" x 6" tile		175	.091		3.12	3.44		6.56	8.50
5810	8" x 8" tile		170	.094		4.27	3.54		7.81	9.90
5820	12" x 12" tile		160	.100		4.35	3.76		8.11	10.35
5830	16" x 16" tile		150	.107		4.77	4.01		8.78	11.15
6000	Decoroted woll tile, 4-1/4" x 4-1/4", minimum		270	.059		3.18	2.23		5.41	6.80
6100	Maximum		180	.089		49.50	3.34		52.84	59.50
6300	Exterior wolls, frostproof, mud set, 4-1/4" x 4-1/4"		102	.157		7.15	5.90		13.05	16.55
6400	1-3/8" x 1-3/8"		93	.172		5.20	6.45		11.65	15.25
6600	Crystolline glozed, 4-1/4" x 4-1/4", mud set, ploin		100	.160		4.27	6		10.27	13.55
6700	4-1/4" x 4-1/4", scored tile		100	.160		5.80	6		11.80	15.25
6900	6" x 6" ploin		93	.172		6.50	6.45		12.95	16.70
7000	For epoxy grout, 1/16" joints, 4-1/4" tile, odd		800	.020		.41	.75		1.16	1.56
7200	For tile set in dry mortar, odd		1735	.009			.35		.35	.51
7300	For tile set in Portland cement mortar, odd		290	.055		.16	2.07		2.23	3.24
9300	Ceromic tiles, recycled gloss, standard colors, 2" x 2" thru 6" x 6"	G	190	.084		20	3.17		23.17	26.50
9310	6" x 6"	G	175	.091		20	3.44		23.44	27
9320	8" x 8"	G	170	.094		22	3.54		25.54	29.50
9330	12" x 12"	G	160	.100		22	3.76		25.76	30

09 30 Tiling

09 30 13 – Ceramic Tiling

09 30 13.10 Ceramic Tile			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
9340	Earthtones, 2" x 2" to 4" x 8"	G	D-7	190	.084	S.F.	25	3.17		28.17	32
9350	6" x 6"	G		175	.091		25	3.44		28.44	32.50
9360	8" x 8"	G		170	.094		26	3.54		29.54	33.50
9370	12" x 12"	G		160	.100		26	3.76		29.76	34
9380	Deep colors, 2" x 2" to 4" x 8"	G		190	.084		29.50	3.17		32.67	37
9390	6" x 6"	G		175	.091		29.50	3.44		32.94	37.50
9400	8" x 8"	G		170	.094		31	3.54		34.54	39
9410	12" x 12"	G		160	.100		31	3.76		34.76	39.50

09 30 13.20 Ceramic Tile Repairs

0010	CERAMIC TILE REPAIRS										
1000	Grout removal, corbide tipped, rotary grinder		1 Clob	240	.033	L.F.		1.22		1.22	1.88
1100	RegROUT tile 4-1/2 x 4-1/2, or larger, wall		1 Tlf	100	.080	S.F.	.14	3.36		3.50	5.10
1150	Floor			125	.064		.15	2.68		2.83	4.13
1200	Seal tile and grout			360	.022			.93		.93	1.38

09 30 13.45 Ceramic Tile Accessories

0010	CERAMIC TILE ACCESSORIES										
0100	Spacers, 1/8"					C	1.98			1.98	2.18
1310	Sealer for natural stone tile, installed		1 Tlf	650	.012	S.F.	.05	.52		.57	.82

09 30 16 – Quarry Tiling

09 30 16.10 Quarry Tile

0010	QUARRY TILE										
0100	Bose, cove or sanitary, mud set, to 5" high, 1/2" thick		D-7	110	.145	L.F.	5.35	5.45		10.80	13.95
0300	Bullnose trim, red, mud set, 6" x 6" x 1/2" thick			120	.133		4.39	5		9.39	12.25
0400	4" x 4" x 1/2" thick			110	.145		4.50	5.45		9.95	13
0600	4" x 8" x 1/2" thick, using 8" as edge			130	.123		4.50	4.63		9.13	11.75
0700	Floors, mud set, 1,000 S.F. lots, red, 4" x 4" x 1/2" thick			120	.133	S.F.	7.05	5		12.05	15.15
0900	6" x 6" x 1/2" thick			140	.114		7.30	4.30		11.60	14.40
1000	4" x 8" x 1/2" thick			130	.123		6.05	4.63		10.68	13.45
1300	For waxed coating, odd						.74			.74	.81
1500	For non-standard colors, odd						.45			.45	.50
1600	For abrasive surface, odd						.51			.51	.56
1800	Brown tile, imported, 6" x 6" x 3/4"		D-7	120	.133		7.85	5		12.85	16
1900	8" x 8" x 1"			110	.145		8.55	5.45		14	17.45
2100	For thin set mortar application, deduct			700	.023			.86		.86	1.27
2200	For epoxy grout & mortar, 6" x 6" x 1/2", odd			350	.046		2.02	1.72		3.74	4.75
2700	Stair tread, 6" x 6" x 3/4", plain			50	.320		6.95	12.05		19	25.50
2800	Abrasive			47	.340		5.95	12.80		18.75	25.50
3000	Wainscot, 6" x 6" x 1/2", thin set, red			105	.152		4.63	5.75		10.38	13.55
3100	Non-standard colors			105	.152		5.15	5.75		10.90	14.10
3300	Window sill, 6" wide, 3/4" thick			90	.178	L.F.	6.20	6.70		12.90	16.65
3400	Corners			80	.200	Co.	6.65	7.50		14.15	18.40

09 30 23 – Glass Mosaic Tiling

09 30 23.10 Glass Mosaics

0010	GLASS MOSAICS 3/4" tile on 12" sheets, standard grout										
0300	Color group 1 & 2		D-7	73	.219	S.F.	16.45	8.25		24.70	30.50
0350	Color group 3			73	.219		20.50	8.25		28.75	34.50
0400	Color group 4			73	.219		26	8.25		34.25	40.50
0450	Color group 5			73	.219		27.50	8.25		35.75	42
0500	Color group 6			73	.219		35.50	8.25		43.75	51
0600	Color group 7			73	.219		43.50	8.25		51.75	60
0700	Color group 8, golds, silvers & specialties			64	.250		54	9.40		63.40	73.50

09 30 Tiling

09 30 23 – Glass Mosaic Tiling

09 30 23.10 Glass Mosaics		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1020	1" tile on 12" sheets, opalescent finish	D-7	73	.219	S.F.	17.55	8.25		25.80	31.50
1040	1" x 2" tile on 12" sheet, blend		73	.219		17.30	8.25		25.55	31
1060	2" tile on 12" sheet, blend		73	.219		17.10	8.25		25.35	31
1080	5/8" x random tile, linear, on 12" sheet, blend		73	.219		28	8.25		36.25	43
1600	Dots on 12" sheet		73	.219		28	8.25		36.25	43
1700	For glass mosaic tiles set in dry mortar, odd		290	.055		.45	2.07		2.52	3.56
1720	For glass mosaic tile set in Portland cement mortar, odd		290	.055	▼	.01	2.07		2.08	3.07
1730	For polyblend sanded tile grout	▼	96.15	.166	Lb.	2.19	6.25		8.44	11.60

09 30 29 – Metal Tiling

09 30 29.10 Metal Tile

0010	METAL TILE 4' x 4' sheet, 24 ga., tile pattern, noiled									
0200	Stainless steel	2 Carp	512	.031	S.F.	27.50	1.43		28.93	32
0400	Aluminized steel	"	512	.031	"	14.80	1.43		16.23	18.45

09 34 Waterproofing-Membrane Tiling

09 34 13 – Waterproofing-Membrane Ceramic Tiling

09 34 13.10 Ceramic Tile Waterproofing Membrane

0010	CERAMIC TILE WATERPROOFING MEMBRANE									
0020	On floors, including thinset									
0030	Fleece laminated polyethylene grid, 1/8" thick	D-7	250	.064	S.F.	2.23	2.41		4.64	6
0040	5/16" thick	"	250	.064	"	2.55	2.41		4.96	6.35
0050	On walls, including thinset									
0060	Fleece laminated polyethylene sheet, 8 mil thick	D-7	480	.033	S.F.	2.23	1.25		3.48	4.30
0070	Accessories, including thinset									
0080	Joint and corner sheet, 4 mils thick, 5" wide	1 Tilt	240	.033	L.F.	1.32	1.40		2.72	3.51
0090	7-1/4" wide		180	.044		1.68	1.86		3.54	4.60
0100	10" wide		120	.067	▼	2.05	2.80		4.85	6.35
0110	Pre-farmed corners, inside		32	.250	Ea.	6.20	10.50		16.70	22.50
0120	Outside		32	.250		7.35	10.50		17.85	23.50
0130	2" flanged floor drain with 6" stainless steel grate		16	.500	▼	380	21		401	445
0140	EPS, sloped shower floor		480	.017	S.F.	4.77	.70		5.47	6.30
0150	Curb	▼	32	.250	L.F.	13.50	10.50		24	30.50

09 51 Acoustical Ceilings

09 51 23 – Acoustical Tile Ceilings

09 51 23.10 Suspended Acoustic Ceiling Tiles

0010	SUSPENDED ACOUSTIC CEILING TILES , not including									
0100	suspension system									
0300	Fiberglass boards, film faced, 2' x 2' or 2' x 4', 5/8" thick	1 Carp	625	.013	S.F.	1.02	.59		1.61	2.03
0400	3/4" thick		600	.013		1.67	.61		2.28	2.78
0500	3" thick, thermal, R11		450	.018		1.90	.82		2.72	3.35
0600	Glass cloth faced fiberglass, 3/4" thick		500	.016		2.01	.73		2.74	3.34
0700	1" thick		485	.016		2.74	.76		3.50	4.18
0820	1-1/2" thick, nubby face		475	.017		2.50	.77		3.27	3.94
1110	Mineral fiber tile, lay-in, 2' x 2' or 2' x 4', 5/8" thick, fine texture		625	.013		1.25	.59		1.84	2.29
1115	Rough textured		625	.013		1.21	.59		1.80	2.24
1125	3/4" thick, fine textured		600	.013		1.66	.61		2.27	2.77
1130	Rough textured		600	.013		1.65	.61		2.26	2.76
1135	Fissured	▼	600	.013	▼	2.70	.61		3.31	3.91

09 51 Acoustical Ceilings

09 51 23 – Acoustical Tile Ceilings

09 51 23.10 Suspended Acoustic Ceiling Tiles		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1150	Tegular, 5/8" thick, fine textured	1 Carp	470	.017	S.F.	1.64	.78		2.42	3
1155	Rough textured		470	.017		1.18	.78		1.96	2.50
1165	3/4" thick, fine textured		450	.018		2.70	.82		3.52	4.23
1170	Rough textured		450	.018		1.54	.82		2.36	2.95
1175	Fissured		450	.018		2.70	.82		3.52	4.23
1185	For plastic film face, add					.84			.84	.92
1190	For fire rating, add					.45			.45	.50
1300	Mirror tile, acrylic, 2' x 2'	1 Carp	500	.016		10.70	.73		11.43	12.90
1900	Eggcrate, acrylic, 1/2" x 1/2" x 1/2" cubes		500	.016		1.86	.73		2.59	3.18
2100	Polystyrene eggcrate, 3/8" x 3/8" x 1/2" cubes		510	.016		1.56	.72		2.28	2.83
2200	1/2" x 1/2" x 1/2" cubes		500	.016		1.74	.73		2.47	3.04
2400	Luminaus panels, prismatic, acrylic		400	.020		2.26	.92		3.18	3.91
2500	Polystyrene		400	.020		1.16	.92		2.08	2.70
2700	Flat white acrylic		400	.020		3.94	.92		4.86	5.75
2800	Polystyrene		400	.020		2.70	.92		3.62	4.39
3000	Drap pan, white, acrylic		400	.020		5.75	.92		6.67	7.75
3100	Polystyrene		400	.020		4.82	.92		5.74	6.70
3600	Perforated aluminum sheets, .024" thick, corrugated, painted		490	.016		2.34	.75		3.09	3.73
3700	Plain		500	.016		3.92	.73		4.65	5.45
3720	Mineral fiber, 24" x 24" or 48", reveal edge, painted, 5/8" thick		600	.013		1.18	.61		1.79	2.24
3740	3/4" thick		575	.014		1.54	.64		2.18	2.67
5020	66 – 78% recycled content, 3/4" thick		600	.013		1.87	.61		2.48	3
5040	Mylar, 42% recycled content, 3/4" thick		600	.013		4.41	.61		5.02	5.80

09 51 23.30 Suspended Ceilings, Complete

0010	SUSPENDED CEILINGS, COMPLETE , including standard									
0100	suspension system but not incl. 1-1/2" carrier channels									
0600	Fiberglass ceiling board, 2' x 4' x 5/8", plain faced	1 Carp	500	.016	S.F.	1.72	.73		2.45	3.02
0700	Offices, 2' x 4' x 3/4"		380	.021		2.37	.97		3.34	4.10
0800	Mineral fiber, on 15/16" T bar susp. 2' x 2' x 3/4" lay-in board		345	.023		2.57	1.06		3.63	4.46
0810	2' x 4' x 5/8" tile		380	.021		2.65	.97		3.62	4.40
0820	Tegular, 2' x 2' x 5/8" tile on 9/16" grid		250	.032		3.12	1.47		4.59	5.70
0830	2' x 4' x 3/4" tile		275	.029		3.02	1.33		4.35	5.40
0900	Luminaus panels, prismatic, acrylic		255	.031		2.96	1.44		4.40	5.50
1200	Metal pan with acoustic pad, steel		75	.107		4.48	4.89		9.37	12.50
1300	Painted aluminum		75	.107		3.04	4.89		7.93	10.90
1500	Aluminum, degreased finish		75	.107		5.15	4.89		10.04	13.25
1600	Stainless steel		75	.107		9.70	4.89		14.59	18.20
1800	Tile, Z bar suspension, 5/8" mineral fiber tile		150	.053		2.32	2.45		4.77	6.30
1900	3/4" mineral fiber tile		150	.053		2.48	2.45		4.93	6.50
2400	For strip lighting, see Section 26 51 13.50									
2500	For rooms under 500 S.F., add				S.F.		25%			

09 51 53 – Direct-Applied Acoustical Ceilings

09 51 53.10 Ceiling Tile

0010	CEILING TILE , stapled or cemented									
0100	12" x 12" or 12" x 24", not including furring									
0600	Mineral fiber, vinyl coated, 5/8" thick	1 Carp	300	.027	S.F.	1.87	1.22		3.09	3.95
0700	3/4" thick		300	.027		1.78	1.22		3	3.85
0900	Fire rated, 3/4" thick, plain faced		300	.027		1.29	1.22		2.51	3.31
1000	Plastic coated face		300	.027		1.29	1.22		2.51	3.31
1200	Aluminum faced, 5/8" thick, plain		300	.027		1.61	1.22		2.83	3.66
3700	Wall application of above, add		1000	.008			.37		.37	.57
3900	For ceiling primer, add					.13			.13	.14

09 51 Acoustical Ceilings

09 51 53 – Direct-Applied Acoustical Ceilings

09 51 53.10 Ceiling Tile		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4000	For ceiling cement, add				S.F.	.38			.38	.42

09 53 Acoustical Ceiling Suspension Assemblies

09 53 23 – Metal Acoustical Ceiling Suspension Assemblies

09 53 23.30 Ceiling Suspension Systems

0010	CEILING SUSPENSION SYSTEMS for boards and tile									
0050	Class A suspension system, 15/16" T bar, 2' x 4' grid	1 Corp	800	.010	S.F.	.70	.46		1.16	1.48
0300	2' x 2' grid		650	.012		.91	.56		1.47	1.87
0310	25% recycled steel, 2' x 4' grid	G	800	.010		.76	.46		1.22	1.54
0320	2' x 2' grid	G	650	.012		.95	.56		1.51	1.91
0350	For 9/16" grid, add					.16			.16	.18
0360	For fire rated grid, add					.09			.09	.10
0370	For colored grid, add					.21			.21	.23
0400	Concealed Z bar suspension system, 12" module	1 Corp	520	.015		.78	.71		1.49	1.95
0600	1-1/2" carrier channels, 4' O.C., add	"	470	.017		.11	.78		.89	1.32
0700	Carrier channels for ceilings with									
0900	recessed lighting fixtures, add	1 Corp	460	.017	S.F.	.20	.80		1	1.45
1040	Hanging wire, 12 ga., 4' long		65	.123	C.S.F.	.31	5.65		5.96	9.05
1080	8' long		65	.123	"	.62	5.65		6.27	9.40
3000	Seismic ceiling bracing, IBC Site Class D, Occupancy Category II									
3050	For ceilings less than 2500 S.F.									
3060	Seismic clips at attached walls	1 Corp	180	.044	Ea.	1	2.04		3.04	4.24
3100	For ceilings greater than 2500 S.F., add									
3120	Seismic clips, joints at cross tees	1 Corp	120	.067	Ea.	2.90	3.06		5.96	7.90
3140	At cross tees and mains, mains field cut	"	60	.133	"	2.90	6.10		9	12.65
3200	Compression posts, telescopic, attached to structure above									
3210	To 30" high	1 Corp	26	.308	Ea.	27	14.10		41.10	52
3220	30" to 48" high		25.50	.314		43.50	14.40		57.90	70
3230	48" to 84" high		25	.320		52.50	14.65		67.15	80
3240	84" to 102" high		24.50	.327		60	14.95		74.95	89
3250	102" to 120" high		24	.333		85.50	15.30		100.80	118
3260	120" to 144" high		24	.333		95	15.30		110.30	129
3300	Stabilizer bars									
3310	12" long	1 Corp	240	.033	Ea.	.78	1.53		2.31	3.22
3320	24" long		235	.034		.77	1.56		2.33	3.26
3330	36" long		230	.035		.72	1.59		2.31	3.25
3340	48" long		220	.036		.73	1.67		2.40	3.37
3400	Wire support for light fixtures, per L.F. height to structure above									
3410	Less than 10 lb.	1 Corp	400	.020	L.F.	.28	.92		1.20	1.72
3420	10 lb. to 56 lb.	"	240	.033	"	.55	1.53		2.08	2.97

09 54 Specialty Ceilings

09 54 33 – Decorative Panel Ceilings

09 54 33.20 Metal Panel Ceilings

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	METAL PANEL CEILINGS									
0020	Lay-in or screwed to furring, not including grid									
0100	Tin ceilings, 2' x 2' or 2' x 4', bare steel finish	2 Corp	300	.053	S.F.	2.46	2.45		4.91	6.45
0120	Pointed white finish		300	.053	"	3.67	2.45		6.12	7.80
0140	Copper, chrome or brass finish		300	.053	L.F.	6.45	2.45		8.90	10.85
0200	Cornice molding, 2-1/2" to 3-1/2" wide, 4' long, bare steel finish		200	.080	S.F.	2.21	3.67		5.88	8.10
0220	Pointed white finish		200	.080		2.92	3.67		6.59	8.85
0240	Copper, chrome or brass finish		200	.080		3.91	3.67		7.58	9.95
0320	5" to 6-1/2" wide, 4' long, bare steel finish		150	.107		3.19	4.89		8.08	11.05
0340	Pointed white finish		150	.107		4.25	4.89		9.14	12.20
0360	Copper, chrome or brass finish		150	.107		6.50	4.89		11.39	14.70
0420	Flot molding, 3-1/2" to 5" wide, 4' long, bare steel finish		250	.064		3.29	2.93		6.22	8.15
0440	Pointed white finish		250	.064		3.80	2.93		6.73	8.70
0460	Copper, chrome or brass finish		250	.064		7.35	2.93		10.28	12.65

09 62 Specialty Flooring

09 62 19 – Laminate Flooring

09 62 19.10 Floating Floor

0010	FLOATING FLOOR									
8300	Floating floor, laminate, wood pattern strip, complete	1 Clob	133	.060	S.F.	5.05	2.20		7.25	8.95
8310	Components, T & G wood composite strips					4.02			4.02	4.42
8320	Film					.14			.14	.15
8330	Foam					.25			.25	.28
8340	Adhesive					.65			.65	.72
8350	Installation kit					.17			.17	.19
8360	Trim, 2" wide x 3' long				L.F.	3.85			3.85	4.24
8370	Reducer moulding				"	5.20			5.20	5.70

09 62 23 – Bamboo Flooring

09 62 23.10 Flooring, Bamboo

0010	FLOORING, BAMBOO									
8600	Flooring, wood, bamboo strips, unfinished, 5/8" x 4" x 3'	G	1 Corp	255	.031	S.F.	4.53	1.44	5.97	7.20
8610	5/8" x 4" x 4'	G		275	.029		4.70	1.33	6.03	7.20
8620	5/8" x 4" x 6'	G		295	.027		5.15	1.24	6.39	7.60
8630	Finished, 5/8" x 4" x 3'	G		255	.031		4.99	1.44	6.43	7.70
8640	5/8" x 4" x 4'	G		275	.029		5.20	1.33	6.53	7.80
8650	5/8" x 4" x 6'	G		295	.027		4.54	1.24	5.78	6.90
8660	Stair treads, unfinished, 1-1/16" x 11-1/2" x 4'	G		18	.444	Eq.	43.50	20.50	64	79.50
8670	Finished, 1-1/16" x 11-1/2" x 4'	G		18	.444		77	20.50	97.50	116
8680	Stair risers, unfinished, 5/8" x 7-1/2" x 4'	G		18	.444		16.05	20.50	36.55	49
8690	Finished, 5/8" x 7-1/2" x 4'	G		18	.444		30.50	20.50	51	65
8700	Stair nosing, unfinished, 6' long	G		16	.500		35.50	23	58.50	74.50
8710	Finished, 6' long	G		16	.500		42	23	65	81.50

09 63 Masonry Flooring

09 63 13 – Brick Flooring

09 63 13.10 Miscellaneous Brick Flooring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
0010	MISCELLANEOUS BRICK FLOORING									
0020	Acid-proof sholes, red, 8" x 3-3/4" x 1-1/4" thick	D-7	.43	37.209	M	685	1,400		2,085	2,825
0050	2-1/4" thick	D-1	.40	40		950	1,650		2,600	3,575
0200	Acid-proof cloy brick, 8" x 3-3/4" x 2-1/4" thick	G	.40	40		930	1,650		2,580	3,550
0250	9" x 4-1/2" x 3"	G	▼	95	.168	S.F.	4.14	6.95	11.09	15.15
0260	Cost ceromic, pressed, 4" x 8" x 1/2", unglazed	D-7	100	.160		6.25	6		12.25	15.75
0270	Glozed		100	.160		8.35	6		14.35	18
0280	Hond molded flooring, 4" x 8" x 3/4", unglazed		95	.168		8.25	6.35		14.60	18.45
0290	Glozed		95	.168		10.35	6.35		16.70	21
0300	8" hexagonol, 3/4" thick, unglazed		85	.188		9.05	7.10		16.15	20.50
0310	Glozed		85	.188		16.35	7.10		23.45	28.50
0400	Heavy duty industriol, cement mortor bed, 2" thick, not incl. brick	D-1	80	.200		.83	8.25		9.08	13.50
0450	Acid-proof joints, 1/4" wide	"	65	.246		1.44	10.15		11.59	17.10
0500	Povers, 8" x 4", 1" to 1-1/4" thick, red	D-7	95	.168		3.64	6.35		9.99	13.35
0510	Ironspot	"	95	.168		5.15	6.35		11.50	15
0540	1-3/8" to 1-3/4" thick, red	D-1	95	.168		3.51	6.95		10.46	14.45
0560	Ironspot		95	.168		5.10	6.95		12.05	16.20
0580	2-1/4" thick, red		90	.178		3.57	7.35		10.92	15.15
0590	Ironspot		90	.178		5.55	7.35		12.90	17.30
0700	Pover, odobe brick, 6" x 12", 1/2" joint	G	42	.381		1.38	15.75		17.13	25.50
0710	Mexicon red, 12" x 12"	G	1 Tilf	48	.167	1.66	7		8.66	12.15
0720	Soltillo, 12" x 12"	G	"	48	.167	1.40	7		8.40	11.85
0800	For sidewolks and potios with povers, see Section 32 14 16.10									
0870	For epoxy joints, odd	D-1	600	.027	S.F.	2.77	1.10		3.87	4.73
0880	For Furon underloyment, odd	"	600	.027		2.30	1.10		3.40	4.21
0890	For woxed surface, steom cleaned, odd	A-1H	1000	.008		.20	.29	.08	.57	.75

09 63 40 – Stone Flooring

09 63 40.10 Marble

0010	MARBLE									
0020	Thin gouge tile, 12" x 6", 3/8", white Cororo	D-7	60	.267	S.F.	14.90	10.05		24.95	31
0100	Trovertine		60	.267		13.30	10.05		23.35	29.50
0200	12" x 12" x 3/8", thin set, floors		60	.267		9	10.05		19.05	24.50
0300	On wolls		52	.308	▼	9.85	11.55		21.40	28
1000	Morble threshold, 4" wide x 36" long x 5/8" thick, white	▼	60	.267	EO.	9	10.05		19.05	24.50

09 63 40.20 Slate Tile

0010	SLATE TILE									
0020	Vermont, 6" x 6" x 1/4" thick, thin set	D-7	180	.089	S.F.	7	3.34		10.34	12.65
0200	See also Section 32 14 40.10									

09 64 Wood Flooring

09 64 16 – Wood Block Flooring

09 64 16.10 End Grain Block Flooring

0010	END GRAIN BLOCK FLOORING									
0020	End groin flooring, coated, 2" thick	1 Corp	295	.027	S.F.	3.52	1.24		4.76	5.80
0400	Noturol finish, 1" thick, fir		125	.064		3.64	2.93		6.57	8.55
0600	1-1/2" thick, pine		125	.064		3.57	2.93		6.50	8.45
0700	2" thick, pine	▼	125	.064	▼	4.12	2.93		7.05	9.05

09 64 Wood Flooring

09 64 19 – Wood Composition Flooring

09 64 19.10 Wood Composition		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WOOD COMPOSITION Gym floors									
0100	2-1/4" x 6-7/8" x 3/8", on 2" grout setting bed	D-7	150	.107	S.F.	6.05	4.01		10.06	12.55
0200	Thin set, on concrete	"	250	.064		5.50	2.41		7.91	9.60
0300	Sanding and finishing, add	1 Corp	200	.040		.83	1.83		2.66	3.74

09 64 23 – Wood Parquet Flooring

09 64 23.10 Wood Parquet										
0010	WOOD PARQUET flooring									
5200	Parquetry, standard, 5/16" thick, not incl. finish, oak, minimum	1 Corp	160	.050	S.F.	4.14	2.29		6.43	8.10
5300	Maximum		100	.080		7	3.67		10.67	13.35
5500	Teak, minimum		160	.050		4.86	2.29		7.15	8.90
5600	Maximum		100	.080		8.50	3.67		12.17	15
5650	13/16" thick, select grade oak, minimum		160	.050		9.50	2.29		11.79	14
5700	Maximum		100	.080		14.40	3.67		18.07	21.50
5800	Custom parquetry, including finish, minimum		100	.080		15.65	3.67		19.32	23
5900	Maximum		50	.160		21	7.35		28.35	34.50
6700	Parquetry, prefinished white oak, 5/16" thick, minimum		160	.050		4.27	2.29		6.56	8.25
6800	Maximum		100	.080		4.69	3.67		8.36	10.80
7000	Walnut or teak, parquetry, minimum		160	.050		5.35	2.29		7.64	9.45
7100	Maximum	↓	100	.080	↓	9.35	3.67		13.02	15.95
7200	Acrylic wood parquet blocks, 12" x 12" x 5/16",									
7210	Irrodioted, set in epoxy	1 Corp	160	.050	S.F.	7.80	2.29		10.09	12.10

09 64 29 – Wood Strip and Plank Flooring

09 64 29.10 Wood										
0010	WOOD									
0020	Fir, vertical grain, 1" x 4", not incl. finish, grade B & better	1 Corp	255	.031	S.F.	2.74	1.44		4.18	5.25
0100	C grade & better		255	.031		2.58	1.44		4.02	5.05
4000	Maple, strip, 25/32" x 2-1/4", not incl. finish, select		170	.047		5.75	2.16		7.91	9.70
4100	#2 & better		170	.047		4.29	2.16		6.45	8.05
4300	33/32" x 3-1/4", not incl. finish, #1 grade		170	.047		4.49	2.16		6.65	8.25
4400	#2 & better	↓	170	.047	↓	4	2.16		6.16	7.75
4600	Oak, white or red, 25/32" x 2-1/4", not incl. finish									
4700	#1 common	1 Corp	170	.047	S.F.	2.98	2.16		5.14	6.60
4900	Select quartered, 2-1/4" wide		170	.047		4.24	2.16		6.40	8
5000	Clear		170	.047		4.12	2.16		6.28	7.85
6100	Prefinished, white oak, prime grade, 2-1/4" wide		170	.047		4.69	2.16		6.85	8.50
6200	3-1/4" wide		185	.043		5.10	1.98		7.08	8.65
6400	Ranch plank		145	.055		7.15	2.53		9.68	11.75
6500	Hardwood blacks, 9" x 9", 25/32" thick		160	.050		5.90	2.29		8.19	10.05
7400	Yellow pine, 3/4" x 3-1/8", T & G, C & better, not incl. finish	↓	200	.040		1.49	1.83		3.32	4.47
7500	Refinish wood floor, sand, 2 coats poly, wax, soft wood, min.	1 Clab	400	.020		.88	.73		1.61	2.10
7600	Hard wood, max.		130	.062		1.31	2.26		3.57	4.92
7800	Sanding and finishing, 2 coats polyurethane	↓	295	.027	↓	.88	.99		1.87	2.50
7900	Subfloor and underlayment, see Section 06 16									
8015	Transition molding, 2 1/4" wide, 5' long	1 Corp	19.20	.417	Ea.	10.70	19.10		29.80	41.50

09 64 66 – Wood Athletic Flooring

09 64 66.10 Gymnasium Flooring										
0010	GYMNASIUM FLOORING									
0600	Gym floor, in mastic, over 2 ply felt, #2 & better									
0700	25/32" thick maple	1 Corp	100	.080	S.F.	3.77	3.67		7.44	9.80
0900	33/32" thick maple	↓	98	.082	↓	4.76	3.74		8.50	11.05

09 64 Wood Flooring

09 64 66 – Wood Athletic Flooring

09 64 66.10 Gymnasium Flooring		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Casts		Total	Total Incl O&P
							Labar	Equipment		
1000	For 1/2" corkboard underlayment, odd	1 Corp	750	.011	S.F.	.97	.49		1.46	1.82
1300	For #1 grade mople, odd				▼	.50			.50	.55
1600	Mople flooring, over sleepers, #2 & better									
1700	25/32" thick	1 Corp	85	.094	S.F.	4.63	4.32		8.95	11.75
1900	33/32" thick	"	83	.096		5.40	4.42		9.82	12.75
2000	For #1 grade, odd					.54			.54	.59
2200	For 3/4" subfloor, odd	1 Corp	350	.023		1.20	1.05		2.25	2.94
2300	With two 1/2" subfloors, 25/32" thick	"	69	.116	▼	5.80	5.30		11.10	14.55
2500	Mople, incl. finish, #2 & btr., 25/32" thick, on rubber									
2600	Sleepers, with two 1/2" subfloors	1 Corp	76	.105	S.F.	6.20	4.83		11.03	14.30
2800	With steel spline, double connection to chonnels	"	73	.110		6.65	5		11.65	15.05
2900	For 33/32" mople, odd					.71			.71	.78
3100	For #1 grade mople, odd					.54			.54	.59
3500	For termite proofing oll of the above, odd					.29			.29	.32
3700	Portable hardwood, prefinished ponels	1 Corp	83	.096		8.30	4.42		12.72	15.90
3720	Insuloted with polystyrene, 1" thick, odd		165	.048		.71	2.22		2.93	4.21
3750	Running tracks, Sitko spruce surfoce, 25/32" x 2-1/4"		62	.129	▼	15.20	5.90		21.10	26
3770	3/4" plywood surfoce, finished	▼	100	.080	▼	3.60	3.67		7.27	9.60

09 65 Resilient Flooring

09 65 10 – Resilient Tile Underlayment

09 65 10.10 Latex Underlayment

0010	LATEX UNDERLAYMENT									
3600	Lotex underlayment, 1/8" thk., cementitious for resilient flooring	1 Tilf	160	.050	S.F.	1.16	2.10		3.26	4.37
4000	Liquid, fortified				Gol.	34			34	37.50

09 65 13 – Resilient Base and Accessories

09 65 13.13 Resilient Base

0010	RESILIENT BASE									
0690	1/8" vinyl base, 2 1/2" H, straight or cove, stondord colors	1 Tilf	315	.025	L.F.	1.34	1.07		2.41	3.04
0700	4" high		315	.025		1.26	1.07		2.33	2.96
0710	6" high		315	.025	▼	1.52	1.07		2.59	3.24
0720	Corners, 2 1/2" high		315	.025	EO.	2.02	1.07		3.09	3.79
0730	4" high		315	.025	▼	2.56	1.07		3.63	4.39
0740	6" high		315	.025	▼	2.99	1.07		4.06	4.86
0800	1/8" rubber base, 2 1/2" H, straight or cove, stondord colors		315	.025	L.F.	1.13	1.07		2.20	2.81
1100	4" high		315	.025		1.26	1.07		2.33	2.96
1110	6" high		315	.025	▼	1.65	1.07		2.72	3.39
1150	Corners, 2 1/2" high		315	.025	EO.	1.70	1.07		2.77	3.44
1153	4" high		315	.025		2.51	1.07		3.58	4.33
1155	6" high	▼	315	.025	▼	3.15	1.07		4.22	5.05
1450	For premium color/finish odd					50%				
1500	Millwork profile	1 Tilf	315	.025	L.F.	5.85	1.07		6.92	8

09 65 13.23 Resilient Stair Treads and Risers

0010	RESILIENT STAIR TREADS AND RISERS									
0300	Rubber, molded treod, 12" wide, 5/16" thick, block	1 Tilf	115	.070	L.F.	14.10	2.92		17.02	19.80
0400	Colors		115	.070		14.50	2.92		17.42	20.50
0600	1/4" thick, block		115	.070		13.60	2.92		16.52	19.25
0700	Colors		115	.070		14.10	2.92		17.02	19.80
0900	Grip strip safety treod, colors, 5/16" thick		115	.070		22	2.92		24.92	29
1000	3/16" thick	▼	120	.067	▼	16.10	2.80		18.90	22

09 65 Resilient Flooring

09 65 13 – Resilient Base and Accessories

09 65 13.23 Resilient Stair Treads and Risers

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1200	Landings, smooth sheet rubber, 1/8" thick	1 Tlf	120	.067	S.F.	6.95	2.80		9.75	11.75
1300	3/16" thick		120	.067	"	8.75	2.80		11.55	13.75
1500	Nosings, 3" wide, 3/16" thick, black		140	.057	L.F.	3.94	2.40		6.34	7.85
1600	Colors		140	.057		4.29	2.40		6.69	8.25
1800	Risers, 7" high, 1/8" thick, flat		250	.032		6.65	1.34		7.99	9.35
1900	Coved		250	.032		8.25	1.34		9.59	11.10
2100	Vinyl, molded tread, 12" wide, colors, 1/8" thick		115	.070		6.95	2.92		9.87	11.95
2200	1/4" thick		115	.070		8.75	2.92		11.67	13.95
2300	Landing material, 1/8" thick		200	.040	S.F.	6.95	1.68		8.63	10.10
2400	Riser, 7" high, 1/8" thick, coved		175	.046	L.F.	3.95	1.92		5.87	7.20
2500	Tread and riser combined, 1/8" thick		80	.100	"	10.45	4.20		14.65	17.70

09 65 16 – Resilient Sheet Flooring

09 65 16.10 Rubber and Vinyl Sheet Flooring

0010	RUBBER AND VINYL SHEET FLOORING									
5500	Linoleum, sheet goods		1 Tlf	360	.022	S.F.	3.59	.93	4.52	5.30
5900	Rubber, sheet goods, 36" wide, 1/8" thick			120	.067		7.65	2.80	10.45	12.50
5950	3/16" thick			100	.080		10.35	3.36	13.71	16.35
6000	1/4" thick			90	.089		12.25	3.73	15.98	19
8000	Vinyl sheet goods, backed, .065" thick, minimum			250	.032		4.10	1.34	5.44	6.50
8050	Maximum			200	.040		5	1.68	6.68	7.95
8100	.080" thick, minimum			230	.035		4.10	1.46	5.56	6.65
8150	Maximum			200	.040		5.90	1.68	7.58	8.95
8200	.125" thick, minimum			230	.035		4.25	1.46	5.71	6.85
8250	Maximum			200	.040		7.50	1.68	9.18	10.70
8400	For welding seams, odd			100	.080	L.F.	.20	3.36	3.56	5.15
8700	Adhesive cement, 1 gallon per 200 to 300 S.F.					Gol.	27		27	29.50
8800	Asphalt primer, 1 gallon per 300 S.F.						14		14	15.40
8900	Emulsion, 1 gallon per 140 S.F.						18		18	19.80

09 65 19 – Resilient Tile Flooring

09 65 19.10 Miscellaneous Resilient Tile Flooring

0010	MISCELLANEOUS RESILIENT TILE FLOORING									
2200	Cork tile, standard finish, 1/8" thick		1 Tlf	315	.025	S.F.	7	1.07	8.07	9.25
2250	3/16" thick			315	.025		7.75	1.07	8.82	10.10
2300	5/16" thick			315	.025		8.45	1.07	9.52	10.80
2350	1/2" thick			315	.025		10.70	1.07	11.77	13.30
2500	Urethane finish, 1/8" thick			315	.025		9.50	1.07	10.57	12
2550	3/16" thick			315	.025		10.30	1.07	11.37	12.90
2600	5/16" thick			315	.025		11.70	1.07	12.77	14.40
2650	1/2" thick			315	.025		15.75	1.07	16.82	18.90
6050	Rubber tile, marbled colors, 12" x 12", 1/8" thick			400	.020		7.25	.84	8.09	9.20
6100	3/16" thick			400	.020		9.25	.84	10.09	11.45
6300	Special tile, plain colors, 1/8" thick			400	.020		10	.84	10.84	12.25
6350	3/16" thick			400	.020		10.25	.84	11.09	12.55
6410	Raised, radiol or square, minimum			400	.020		8	.84	8.84	10.05
6430	Maximum			400	.020		11	.84	11.84	13.35
6450	For golf course, skating rink, etc., 1/4" thick			275	.029		13.95	1.22	15.17	17.15
6700	Synthetic turf, 3/8" thick			90	.089		6.95	3.73	10.68	13.15
6750	Interlocking 2' x 2' squares, 1/2" thick, not									
6810	cemented, for playgrounds, minimum		1 Tlf	210	.038	S.F.	6.25	1.60	7.85	9.25
6850	Maximum			190	.042		13.40	1.77	15.17	17.35
7000	Vinyl composition tile, 12" x 12", 1/16" thick			500	.016		.86	.67	1.53	1.94
7050	Embossed			500	.016		2.21	.67	2.88	3.42

09 65 Resilient Flooring

09 65 19 – Resilient Tile Flooring

09 65 19.10 Miscellaneous Resilient Tile Flooring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
7100	Morbleized	1 Tlf	500	.016	S.F.	2.21	.67		2.88	3.42
7150	Solid		500	.016		2.85	.67		3.52	4.13
7200	3/32" thick, embossed		500	.016		1.46	.67		2.13	2.60
7250	Morbleized		500	.016		2.54	.67		3.21	3.78
7300	Solid		500	.016		2.36	.67		3.03	3.59
7350	1/8" thick, morbleized		500	.016		2.22	.67		2.89	3.43
7400	Solid		500	.016		2.26	.67		2.93	3.48
7450	Conductive		500	.016		6.70	.67		7.37	8.35
7500	Vinyl tile, 12" x 12", .050" thick, minimum		500	.016		3.42	.67		4.09	4.75
7550	Maximum		500	.016		7	.67		7.67	8.70
7600	1/8" thick, minimum		500	.016		4.99	.67		5.66	6.50
7650	Solid colors		500	.016		3.65	.67		4.32	5
7700	Morbleized or Travertine pattern		500	.016		5.90	.67		6.57	7.50
7750	Florentine pattern		500	.016		6.30	.67		6.97	7.95
7800	Maximum	↓	500	.016	↓	13	.67		13.67	15.30

09 65 33 – Conductive Resilient Flooring

09 65 33.10 Conductive Rubber and Vinyl Flooring

0010	CONDUCTIVE RUBBER AND VINYL FLOORING									
1700	Conductive flooring, rubber tile, 1/8" thick	1 Tlf	315	.025	S.F.	6.60	1.07		7.67	8.80
1800	Homogeneous vinyl tile, 1/8" thick	"	315	.025	"	8.75	1.07		9.82	11.20

09 66 Terrazzo Flooring

09 66 13 – Portland Cement Terrazzo Flooring

09 66 13.10 Portland Cement Terrazzo

0010	PORTLAND CEMENT TERRAZZO, cost-in-place	R096613-10								
0020	Cove base, 6" high, 16 ga. zinc	1 Mstz	20	.400	L.F.	3.19	16.65		19.84	28
0100	Curb, 6" high and 6" wide		6	1.333		5.60	55.50		61.10	88
0300	Divider strip for floors, 14 ga., 1-1/4" deep, zinc		375	.021		1.46	.89		2.35	2.92
0400	Bross		375	.021		2.56	.89		3.45	4.13
0600	Heavy top strip 1/4" thick, 1-1/4" deep, zinc		300	.027		2.08	1.11		3.19	3.93
0900	Golv. bottoms, bross		300	.027		3.32	1.11		4.43	5.30
1200	For thin set floors, 16 ga., 1/2" x 1/2", zinc		350	.023		.98	.95		1.93	2.48
1300	Bross	↓	350	.023	↓	2.39	.95		3.34	4.03
1500	Floor, bonded to concrete, 1-3/4" thick, gray cement	J-3	75	.213	S.F.	3.28	8.15	3.87	15.30	19.85
1600	White cement, mud set		75	.213		3.65	8.15	3.87	15.67	20.50
1800	Not bonded, 3" total thickness, gray cement		70	.229		4.08	8.75	4.15	16.98	22
1900	White cement, mud set	↓	70	.229	↓	4.76	8.75	4.15	17.66	22.50
2100	For Venetian terrazzo, 1" topping, odd					50%	50%			
2200	For heavy duty abrasive terrazzo, odd					50%	50%			
2700	Monolithic terrazzo, 1/2" thick									
2710	10' panels	J-3	125	.128	S.F.	3.08	4.89	2.32	10.29	13.15
3000	Stairs, cost in place, panel filled treads		30	.533	L.F.	3.31	20.50	9.70	33.51	44.50
3100	Treads and risers	↓	14	1.143	"	5.85	43.50	21	70.35	94
3300	For stair landings, add to floor prices						50%			
3400	Stair stringers and foscio	J-3	30	.533	S.F.	5.50	20.50	9.70	35.70	46.50
3600	For abrasive metal nosings on stairs, odd		150	.107	L.F.	9.05	4.08	1.94	15.07	18.10
3700	For abrasive surface finish, odd		600	.027	S.F.	1.52	1.02	.48	3.02	3.70
3900	For raised abrasive strips, odd		150	.107	L.F.	1.32	4.08	1.94	7.34	9.60
4000	Wainscot, bonded, 1-1/2" thick		30	.533	S.F.	3.88	20.50	9.70	34.08	45
4200	1/4" thick	↓	40	.400	"	5.45	15.30	7.25	28	36.50

09 66 Terrazzo Flooring

09 66 13 – Portland Cement Terrazzo Flooring

09 66 13.10 Portland Cement Terrazzo		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4300	Stane chips, anyx gemstane, per 50 lb. bag				Bag	16.50			16.50	18.15

09 66 16 – Terrazzo Floor Tile

09 66 16.10 Tile or Terrazzo Base

0010	TILE OR TERRAZZO BASE									
0020	Scratch coat only	1 Mstz	150	.053	S.F.	.43	2.22		2.65	3.74
0500	Scratch and brawn coat only	"	75	.107	"	.82	4.44		5.26	7.45

09 66 16.13 Portland Cement Terrazzo Floor Tile

0010	PORTLAND CEMENT TERRAZZO FLOOR TILE									
1200	Floor tiles, non-slip, 1" thick, 12" x 12"	D-1	60	.267	S.F.	19.70	11		30.70	38.50
1300	1-1/4" thick, 12" x 12"		60	.267	"	20.50	11		31.50	39.50
1500	16" x 16"		50	.320	"	22	13.20		35.20	44.50
1600	1-1/2" thick, 16" x 16"	▼	45	.356	"	20.50	14.70		35.20	45
1800	For Venetian terrazzo, add					6.10			6.10	6.70
1900	For white cement, add					.57			.57	.63

09 66 16.16 Plastic Matrix Terrazzo Floor Tile

0010	PLASTIC MATRIX TERRAZZO FLOOR TILE									
0100	12" x 12", 3/16" thick, Floor tiles w/marble chips	1 Tilf	500	.016	S.F.	7.30	.67		7.97	9.05
0200	12" x 12", 3/16" thick, Floor tiles w/glass chips		500	.016	"	7.90	.67		8.57	9.65
0300	12" x 12", 3/16" thick, Floor tiles w/recycled cantent	▼	500	.016	▼	6.20	.67		6.87	7.85

09 66 16.30 Terrazzo, Precast

0010	TERRAZZO, PRECAST									
0020	Base, 6" high, straight	1 Mstz	70	.114	L.F.	11.85	4.76		16.61	20
0100	Cave		60	.133	"	12.80	5.55		18.35	22.50
0300	8" high, straight		60	.133	"	11.45	5.55		17	21
0400	Cave	▼	50	.160	"	16.85	6.65		23.50	28.50
0600	For white cement, add					.45			.45	.50
0700	For 16 ga. zinc toe strip, add					1.72			1.72	1.89
0900	Curbs, 4" x 4" high	1 Mstz	40	.200	"	32.50	8.35		40.85	48
1000	8" x 8" high	"	30	.267	"	37.50	11.10		48.60	57.50
2400	Stair treads, 1-1/2" thick, non-slip, three line pattern	2 Mstz	70	.229	"	41	9.50		50.50	59
2500	Nasing and two lines		70	.229	"	41	9.50		50.50	59
2700	2" thick treads, straight		60	.267	"	45.50	11.10		56.60	66.50
2800	Curved		50	.320	"	59	13.35		72.35	84.50
3000	Stair risers, 1" thick, to 6" high, straight sections		60	.267	"	10.30	11.10		21.40	27.50
3100	Cave		50	.320	"	15.30	13.35		28.65	36.50
3300	Curved, 1" thick, to 6" high, vertical		48	.333	"	21	13.90		34.90	43.50
3400	Cave		38	.421	"	42	17.55		59.55	72
3600	Stair tread and riser, single piece, straight, minimum		60	.267	"	52	11.10		63.10	74
3700	Maximum		40	.400	"	67.50	16.65		84.15	98.50
3900	Curved tread and riser, minimum		40	.400	"	73	16.65		89.65	105
4000	Maximum		32	.500	"	92	21		113	132
4200	Stair stringers, natched, 1" thick		25	.640	"	30	26.50		56.50	72.50
4300	2" thick		22	.727	▼	35	30.50		65.50	83
4500	Stair landings, structural, non-slip, 1-1/2" thick		85	.188	S.F.	32.50	7.85		40.35	47
4600	3" thick	▼	75	.213	"	46	8.90		54.90	63.50
4800	Wainscat, 12" x 12" x 1" tiles	1 Mstz	12	.667	"	6.85	28		34.85	48.50
4900	16" x 16" x 1-1/2" tiles	"	8	1	▼	14.25	41.50		55.75	77

09 66 Terrazzo Flooring

09 66 23 – Resinous Matrix Terrazzo Flooring

09 66 23.13 Polyacrylate Modified Cementitious Terrazzo Flooring

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	POLYACRYLATE MODIFIED CEMENTITIOUS TERRAZZO FLOORING									
3150	Polyacrylate, 1/4" thick, minimum	C-6	735	.065	S.F.	3.53	2.50	.09	6.12	7.80
3170	Maximum		480	.100		4.48	3.82	.14	8.44	10.95
3200	3/8" thick, minimum		620	.077		4.55	2.96	.11	7.62	9.65
3220	Maximum	▼	480	.100	▼	6.35	3.82	.14	10.31	13

09 66 23.16 Epoxy-Resin Terrazzo Flooring

0010	EPOXY-RESIN TERRAZZO FLOORING									
1800	Epoxy terrozzo, 1/4" thick, chemical resistant, minimum	J-3	200	.080	S.F.	5.95	3.06	1.45	10.46	12.60
1900	Maximum		150	.107		9	4.08	1.94	15.02	18.05
2500	Epoxy terrozzo, 1/4" thick, minimum		200	.080		5.05	3.06	1.45	9.56	11.70
2550	Average		175	.091		5.85	3.50	1.66	11.01	13.45
2600	Maximum	▼	150	.107	▼	6.25	4.08	1.94	12.27	15

09 66 33 – Conductive Terrazzo Flooring

09 66 33.10 Conductive Terrazzo

0010	CONDUCTIVE TERRAZZO									
2400	Bonded conductive floor for hospitals	J-3	90	.178	S.F.	4.71	6.80	3.23	14.74	18.75

09 66 33.13 Conductive Epoxy-Resin Terrazzo

0010	CONDUCTIVE EPOXY-RESIN TERRAZZO									
2100	Epoxy terrozzo, 1/4" thick, conductive, minimum	J-3	100	.160	S.F.	7.95	6.10	2.91	16.96	21
2200	Maximum	"	90	.178	"	10.35	6.80	3.23	20.38	25

09 66 33.19 Conductive Plastic-Matrix Terrazzo Flooring

0010	CONDUCTIVE PLASTIC-MATRIX TERRAZZO FLOORING									
3300	Conductive, 1/4" thick, minimum	C-6	450	.107	S.F.	7.20	4.08	.15	11.43	14.35
3330	Maximum		305	.157		9.90	6	.22	16.12	20.50
3350	3/8" thick, minimum		365	.132		9.45	5.05	.18	14.68	18.30
3370	Maximum		255	.188		12.65	7.20	.26	20.11	25
3450	Granite, conductive, 1/4" thick, minimum		695	.069		9.15	2.64	.10	11.89	14.20
3470	Maximum		420	.114		11.80	4.37	.16	16.33	19.85
3500	3/8" thick, minimum		695	.069		13.35	2.64	.10	16.09	18.85
3520	Maximum	▼	380	.126	▼	16.15	4.83	.17	21.15	25.50

09 67 Fluid-Applied Flooring

09 67 13 – Elastomeric Liquid Flooring

09 67 13.13 Elastomeric Liquid Flooring

0010	ELASTOMERIC LIQUID FLOORING									
0020	Cementitious acrylic, 1/4" thick	C-6	520	.092	S.F.	1.63	3.53	.13	5.29	7.35
0100	3/8" thick	"	450	.107		2.06	4.08	.15	6.29	8.70
0200	Methyl methacrylate, 1/4" thick	C-8A	3000	.016		5.80	.63		6.43	7.30
0210	1/8" thick	"	3000	.016		3.18	.63		3.81	4.46
0300	Cupric oxychloride, on bond coat, minimum	C-6	480	.100		3.51	3.82	.14	7.47	9.85
0400	Maximum		420	.114		5.85	4.37	.16	10.38	13.30
2400	Mastic, hot laid, 2 coat, 1-1/2" thick, standard, minimum		690	.070		4.07	2.66	.10	6.83	8.65
2500	Maximum		520	.092		5.25	3.53	.13	8.91	11.30
2700	Acid-proof, minimum		605	.079		5.25	3.03	.11	8.39	10.50
2800	Maximum		350	.137		7.25	5.25	.19	12.69	16.15
3000	Neoprene, troweled on, 1/4" thick, minimum		545	.088		4.01	3.37	.12	7.50	9.70
3100	Maximum		430	.112		5.50	4.27	.15	9.92	12.75
4300	Polyurethane, with suspended vinyl chips, minimum		1065	.045		7.50	1.72	.06	9.28	10.95
4500	Maximum	▼	860	.056	▼	10.80	2.13	.08	13.01	15.25

09 67 Fluid-Applied Flooring

09 67 26 – Quartz Flooring

09 67 26.26 Quartz Flooring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	QUARTZ FLOORING									
0600	Epoxy, with colored quartz chips, broadcast, minimum	C-6	675	.071	S.F.	2.75	2.72	.10	5.57	7.30
0700	Maximum		490	.098		3.97	3.74	.14	7.85	10.25
0900	Troweled, minimum		560	.086		3.50	3.28	.12	6.90	9
1000	Maximum	▼	480	.100	▼	5.25	3.82	.14	9.21	11.80
1200	Heavy duty epoxy topping, 1/4" thick,									
1300	500 to 1,000 S.F.	C-6	420	.114	S.F.	5.55	4.37	.16	10.08	12.95
1500	1,000 to 2,000 S.F.		450	.107		5	4.08	.15	9.23	11.90
1600	Over 10,000 S.F.		480	.100		4.63	3.82	.14	8.59	11.10
3600	Polyester, with colored quartz chips, 1/16" thick, minimum		1065	.045		3.14	1.72	.06	4.92	6.15
3700	Maximum		560	.086		4.15	3.28	.12	7.55	9.70
3900	1/8" thick, minimum		810	.059		3.65	2.26	.08	5.99	7.60
4000	Maximum		675	.071		4.70	2.72	.10	7.52	9.40
4200	Polyester, heavy duty, compared to epoxy, odd	▼	2590	.019	▼	1.51	.71	.03	2.25	2.77

09 67 66 – Fluid-Applied Athletic Flooring

09 67 66.10 Polyurethane

0010	POLYURETHANE									
4400	Thermoset, prefabricated in place, indoor									
4500	3/8" thick for basketball, gyms, etc.	1 Tlf	100	.080	S.F.	5.40	3.36		8.76	10.90
4600	1/2" thick for professional sports		95	.084		7.25	3.53		10.78	13.15
5000	Poured in place, indoor, with finish, 1/4" thick		80	.100		3.99	4.20		8.19	10.60
5050	3/8" thick		65	.123		4.84	5.15		9.99	12.90
5100	1/2" thick	▼	50	.160	▼	6.75	6.70		13.45	17.35

09 68 Carpeting

09 68 05 – Carpet Accessories

09 68 05.11 Flooring Transition Strip

0010	FLOORING TRANSITION STRIP									
0107	Clomp down brass divider, 12' strip, vinyl to carpet	1 Tlf	31.25	.256	Eo.	11.05	10.75		21.80	28
0117	Vinyl to hard surface	"	31.25	.256	"	11.05	10.75		21.80	28

09 68 10 – Carpet Pad

09 68 10.10 Commercial Grade Carpet Pad

0010	COMMERCIAL GRADE CARPET PAD									
9000	Sponge rubber pad, minimum	1 Tlf	150	.053	S.Y.	4.30	2.24		6.54	8.05
9100	Maximum		150	.053		10.20	2.24		12.44	14.50
9200	Felt pad, minimum		150	.053		5.10	2.24		7.34	8.90
9300	Maximum		150	.053		7.60	2.24		9.84	11.65
9400	Bonded urethane pad, minimum		150	.053		5.05	2.24		7.29	8.85
9500	Maximum		150	.053		9.20	2.24		11.44	13.40
9600	Prime urethane pad, minimum		150	.053		3.21	2.24		5.45	6.85
9700	Maximum		150	.053		5.45	2.24		7.69	9.30

09 68 13 – Tile Carpeting

09 68 13.10 Carpet Tile

0010	CARPET TILE									
0100	Tufted nylon, 18" x 18", hard back, 20 oz.	1 Tlf	80	.100	S.Y.	22.50	4.20		26.70	31
0110	26 oz.		80	.100		38.50	4.20		42.70	48.50
0200	Cushion back, 20 oz.		80	.100		28.50	4.20		32.70	37
0210	26 oz.		80	.100		44.50	4.20		48.70	55
1100	Tufted, 24" x 24", hard back, 24 oz. nylon	▼	80	.100	▼	29	4.20		33.20	38

09 68 Carpeting

09 68 13 – Tile Carpeting

09 68 13.10 Carpet Tile		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1180	35 oz.	1 Tlf	80	.100	S.Y.	35.50	4.20		39.70	45.50
5060	42 oz.	↓	80	.100	↓	46	4.20		50.20	57

09 68 16 – Sheet Carpeting

09 68 16.10 Sheet Carpet

0010 SHEET CARPET										
0700	Nylon, level loop, 26 oz., light to medium traffic	1 Tlf	75	.107	S.Y.	30	4.47		34.47	39.50
0720	28 oz., light to medium traffic		75	.107		31.50	4.47		35.97	41
0900	32 oz., medium traffic		75	.107		38	4.47		42.47	48.50
1100	40 oz., medium to heavy traffic		75	.107		56	4.47		60.47	68
2920	Nylon plush, 30 oz., medium traffic		57	.140		29.50	5.90		35.40	41
3000	36 oz., medium traffic		75	.107		39.50	4.47		43.97	50
3100	42 oz., medium to heavy traffic		70	.114		44.50	4.79		49.29	55.50
3200	46 oz., medium to heavy traffic		70	.114		52	4.79		56.79	64
3300	54 oz., heavy traffic		70	.114		56.50	4.79		61.29	69
3340	60 oz., heavy traffic		70	.114		77.50	4.79		82.29	92
3665	Olefin, 24 oz., light to medium traffic		75	.107		17.75	4.47		22.22	26
3670	26 oz., medium traffic		75	.107		19.25	4.47		23.72	27.50
3680	28 oz., medium to heavy traffic		75	.107		21	4.47		25.47	29.50
3700	32 oz., medium to heavy traffic		75	.107		26	4.47		30.47	35
3730	42 oz., heavy traffic		70	.114		28	4.79		32.79	37.50
4110	Wool, level loop, 40 oz., medium traffic		75	.107		131	4.47		135.47	151
4500	50 oz., medium to heavy traffic		75	.107		132	4.47		136.47	152
4700	Patterned, 32 oz., medium to heavy traffic		70	.114		131	4.79		135.79	151
4900	48 oz., heavy traffic	↓	70	.114	↓	135	4.79		139.79	156
5000	For less than full roll (approx. 1500 S.F.), odd					25%				
5100	For small rooms, less than 12' wide, odd						25%			
5200	For large open areas (no cuts), deduct						25%			
5600	For bound carpet baseboard, odd	1 Tlf	300	.027	L.F.	3	1.12		4.12	4.95
5610	For stairs, not incl. price of carpet, odd	"	30	.267	Riser		11.20		11.20	16.50
5620	For borders and patterns, add to labor						18%			
8950	For tackless, stretched installation, odd padding from 09 68 10.10 to above									
9850	For brand-named specific fiber, odd				S.Y.	25%				

09 68 20 – Athletic Carpet

09 68 20.10 Indoor Athletic Carpet

0010 INDOOR ATHLETIC CARPET										
3700	Polyethylene, in rolls, no base incl., landscape surfaces	1 Tlf	275	.029	S.F.	4.07	1.22		5.29	6.30
3800	Nylon action surface, 1/8" thick		275	.029		3.76	1.22		4.98	5.95
3900	1/4" thick		275	.029		5.45	1.22		6.67	7.75
4000	3/8" thick		275	.029		6.80	1.22		8.02	9.30
4100	Golf tee surface with foam back		235	.034		6.75	1.43		8.18	9.55
4200	Practice putting, knitted nylon surface		235	.034		5.70	1.43		7.13	8.40
5500	Polyvinyl chloride, sheet goods for gyms, 1/4" thick		80	.100		9.60	4.20		13.80	16.75
5600	3/8" thick	↓	60	.133	↓	11	5.60		16.60	20.50

09 69 Access Flooring

09 69 13 – Rigid-Grid Access Flooring

09 69 13.10 Access Floors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	ACCESS FLOORS									
0015	Access floor package including panel, pedestal, stringers & laminate cover									
0100	Computer room, greater than 6,000 S.F.	4 Carp	750	.043	S.F.	7.50	1.96		9.46	11.25
0110	Less than 6,000 S.F.	2 Carp	375	.043		8.15	1.96		10.11	12
0120	Office, greater than 6,000 S.F.	4 Carp	1050	.030		5.35	1.40		6.75	8.05
0250	Panels, particle board or steel, 1250# load, no covering, under 6,000 S.F.	2 Carp	600	.027		3.75	1.22		4.97	6
0300	Over 6,000 S.F.		640	.025		3.21	1.15		4.36	5.30
0400	Aluminum, 24" panels	▼	500	.032		32.50	1.47		33.97	38.50
0600	For carpet covering, add					8.75			8.75	9.65
0700	For vinyl floor covering, add					9.05			9.05	9.95
0900	For high pressure laminate covering, add					7.50			7.50	8.25
0910	For snap on stringer system, add	2 Carp	1000	.016	▼	1.56	.73		2.29	2.85
0950	Office applications, steel or concrete panels,									
0960	no covering, over 6,000 S.F.	2 Carp	960	.017	S.F.	10.55	.76		11.31	12.80
1000	Machine cutouts after initial installation	1 Carp	50	.160	Ea.	20	7.35		27.35	33.50
1050	Pedestals, 6" to 12"	2 Carp	85	.188		8.30	8.65		16.95	22.50
1100	Air conditioning grilles, 4" x 12"	1 Carp	17	.471		68	21.50		89.50	109
1150	4" x 18"	"	14	.571		93.50	26		119.50	144
1200	Approach ramps, minimum	2 Carp	60	.267	S.F.	24.50	12.25		36.75	46
1300	Maximum	"	40	.400	"	34	18.35		52.35	66
1500	Handrail, 2 rail, aluminum	1 Carp	15	.533	L.F.	100	24.50		124.50	148

09 72 Wall Coverings

09 72 19 – Textile Wall Covering

09 72 19.10 Textile Wall Covering

0010	TEXTILE WALL COVERING , including sizing; add 10-30% waste @ takeoff									
0020	Silk	1 Pape	640	.013	S.F.	4.09	.50		4.59	5.25
0030	Cotton		640	.013		6.55	.50		7.05	7.95
0040	Linen		640	.013		1.82	.50		2.32	2.75
0050	Blend	▼	640	.013	▼	2.93	.50		3.43	3.97

09 72 20 – Natural Fiber Wall Covering

09 72 20.10 Natural Fiber Wall Covering

0010	NATURAL FIBER WALL COVERING , including sizing; add 10-30% waste @ takeoff									
0015	Bamboo	1 Pape	640	.013	S.F.	2.23	.50		2.73	3.20
0030	Burlap		640	.013		2	.50		2.50	2.95
0045	Jute		640	.013		1.27	.50		1.77	2.15
0060	Sisal	▼	640	.013	▼	1.44	.50		1.94	2.33

09 72 23 – Wallpapering

09 72 23.10 Wallpaper

0010	WALLPAPER including sizing; add 10-30 percent waste @ takeoff	R097223-10								
0050	Aluminum foil	1 Pape	275	.029	S.F.	1.04	1.16		2.20	2.88
0100	Copper sheets, .025" thick, vinyl backing		240	.033		5.55	1.33		6.88	8.10
0300	Phenolic backing		240	.033		7.20	1.33		8.53	9.95
0600	Cork tiles, light or dark, 12" x 12" x 3/16"		240	.033		5.05	1.33		6.38	7.55
0700	5/16" thick		235	.034		2.95	1.35		4.30	5.30
0900	1/4" basketweave		240	.033		3.50	1.33		4.83	5.85
1000	1/2" natural, non-directional pattern		240	.033		7.60	1.33		8.93	10.40
1100	3/4" natural, non-directional pattern		240	.033		11.65	1.33		12.98	14.80
1200	Granular surface, 12" x 36", 1/2" thick		385	.021		1.29	.83		2.12	2.66
1300	1" thick	▼	370	.022		1.66	.86		2.52	3.12

09 72 Wall Coverings

09 72 23 – Wallpapering

09 72 23.10 Wallpaper		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1500	Polyurethane coated, 12" x 12" x 3/16" thick	1 Pope	240	.033	S.F.	4.03	1.33		5.36	6.40
1600	5/16" thick		235	.034		6.30	1.35		7.65	8.95
1800	Cork wallpaper, paperbacked, natural		480	.017		2.04	.66		2.70	3.24
1900	Colors		480	.017		2.84	.66		3.50	4.12
2100	Flexible wood veneer, 1/32" thick, plain woods		100	.080		2.41	3.18		5.59	7.45
2200	Exotic woods		95	.084		3.65	3.35		7	9.05
2400	Gypsum-based, fabric-backed, fire resistant									
2500	for masonry walls, minimum, 21 oz./S.Y.	1 Pope	800	.010	S.F.	.89	.40		1.29	1.58
2700	Maximum (small quantities)	"	640	.013		1.40	.50		1.90	2.29
2750	Acrylic, modified, semi-rigid PVC, .028" thick	2 Corp	330	.048		1.21	2.22		3.43	4.76
2800	.040" thick	"	320	.050		1.78	2.29		4.07	5.50
3000	Vinyl wall covering, fabric-backed, lightweight, type 1 (12-15 oz./S.Y.)	1 Pope	640	.013		.93	.50		1.43	1.77
3300	Medium weight, type 2 (20-24 oz./S.Y.)		480	.017		.90	.66		1.56	1.99
3400	Heavy weight, type 3 (28 oz./S.Y.)		435	.018		1.48	.73		2.21	2.73
3600	Adhesive, 5 gal. lots (18 S.Y./gal.)				Gal.	14.20			14.20	15.60
3700	Wallpaper, average workmanship, solid pattern, low cost paper	1 Pope	640	.013	S.F.	.43	.50		.93	1.22
3900	basic patterns (matching required), avg. cost paper		535	.015		.98	.60		1.58	1.97
4000	Paper at \$85 per double roll, quality workmanship		435	.018		1.94	.73		2.67	3.23
4100	Linen wall covering, paper backed									
4150	Flame treatment, minimum				S.F.	1.01			1.01	1.11
4180	Maximum					1.65			1.65	1.82
4190	Gross cloth, natural fabric	 1 Pope	400	.020		1.87	.80		2.67	3.26
4200	Gross cloths with lining paper, minimum		400	.020		.66	.80		1.46	1.93
4300	Maximum		350	.023		2.66	.91		3.57	4.30

09 77 Special Wall Surfacing

09 77 33 – Fiberglass Reinforced Panels

09 77 33.10 Fiberglass Reinforced Plastic Panels

0010	FIBERGLASS REINFORCED PLASTIC PANELS, .090" thick									
0020	On walls, adhesive mounted, embossed surface	2 Corp	640	.025	S.F.	1.11	1.15		2.26	2.99
0030	Smooth surface		640	.025		1.37	1.15		2.52	3.28
0040	Fire rated, embossed surface		640	.025		1.99	1.15		3.14	3.96
0050	Nylon rivet mounted, on drywall, embossed surface		480	.033		1.11	1.53		2.64	3.58
0060	Smooth surface		480	.033		1.37	1.53		2.90	3.87
0070	Fire rated, embossed surface		480	.033		1.99	1.53		3.52	4.55
0080	On masonry, embossed surface		320	.050		1.11	2.29		3.40	4.76
0090	Smooth surface		320	.050		1.37	2.29		3.66	5.05
0100	Fire rated, embossed surface		320	.050		1.99	2.29		4.28	5.75
0110	Nylon rivet and adhesive mounted, on drywall, embossed surface		240	.067		1.26	3.06		4.32	6.10
0120	Smooth surface		240	.067		1.26	3.06		4.32	6.10
0130	Fire rated, embossed surface		240	.067		2.19	3.06		5.25	7.15
0140	On masonry, embossed surface		190	.084		1.26	3.86		5.12	7.35
0150	Smooth surface		190	.084		1.26	3.86		5.12	7.35
0160	Fire rated, embossed surface		190	.084		2.19	3.86		6.05	8.35
0170	For moldings add	1 Corp	250	.032	L.F.	.26	1.47		1.73	2.55
0180	On ceilings, for lay in grid system, embossed surface		400	.020	S.F.	1.11	.92		2.03	2.64
0190	Smooth surface		400	.020		1.37	.92		2.29	2.93
0200	Fire rated, embossed surface		400	.020		1.99	.92		2.91	3.61

09 77 Special Wall Surfacing

09 77 43 – Panel Systems

09 77 43.20 Slatwall Panels and Accessories

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SLATWALL PANELS AND ACCESSORIES									
0100	Slatwall panel, 4' x 8' x 3/4" T, MDF, paint grade	1 Carp	500	.016	S.F.	1.32	.73		2.05	2.58
0110	Melamine finish		500	.016		1.99	.73		2.72	3.32
0120	High pressure plastic laminate finish	▼	500	.016		3.62	.73		4.35	5.10
0130	Aluminum channel inserts, add				▼	2.29			2.29	2.52
0200	Accessories, carner forms, 8' L				L.F.	5.55			5.55	6.10
0210	T-connector, 8' L					7.50			7.50	8.25
0220	J-mold, 8' L					1.25			1.25	1.38
0230	Edge cap, 8' L					1.09			1.09	1.20
0240	Finish end cap, 8' L				▼	3.37			3.37	3.71
0300	Display hook, metal, 4" L				Ea.	.43			.43	.47
0310	6" L					.47			.47	.52
0320	8" L					.52			.52	.57
0330	10" L					.58			.58	.64
0340	12" L					.64			.64	.70
0350	Acrylic, 4" L					.91			.91	1
0360	6" L					1.05			1.05	1.16
0370	8" L					1.10			1.10	1.21
0380	10" L					1.12			1.12	1.23
0400	Waterfall hanger, metal, 12" - 16"					4			4	4.40
0410	Acrylic					9.85			9.85	10.85
0500	Shelf bracket, metal, 8"					1.92			1.92	2.11
0510	10"					2.16			2.16	2.38
0520	12"					2.36			2.36	2.60
0530	14"					2.60			2.60	2.86
0540	16"					3.04			3.04	3.34
0550	Acrylic, 8"					3.77			3.77	4.15
0560	10"					4.02			4.02	4.42
0570	12"					4.24			4.24	4.66
0580	14"					4.46			4.46	4.91
0600	Shelf, acrylic, 12" x 16" x 1/4"					16.35			16.35	18
0610	12" x 24" x 1/4"				▼	22.50			22.50	25

09 81 Acoustic Insulation

09 81 16 – Acoustic Blanket Insulation

09 81 16.10 Sound Attenuation Blanket

0010	SOUND ATTENUATION BLANKET									
0020	Blanket, 1" thick	1 Carp	925	.009	S.F.	.26	.40		.66	.90
0500	1-1/2" thick		920	.009		.27	.40		.67	.92
1000	2" thick		915	.009		.36	.40		.76	1.02
1500	3" thick		910	.009		.52	.40		.92	1.19
3000	Thermal or acaustical batt above ceiling, 2" thick		900	.009		.50	.41		.91	1.18
3100	3" thick		900	.009		.75	.41		1.16	1.46
3200	4" thick	▼	900	.009		.94	.41		1.35	1.66
3400	Urethane plastic foam, open cell, on wall, 2" thick	2 Carp	2050	.008		3.11	.36		3.47	3.97
3500	3" thick		1550	.010		4.13	.47		4.60	5.25
3600	4" thick		1050	.015		5.80	.70		6.50	7.45
3700	On ceiling, 2" thick		1700	.009		3.10	.43		3.53	4.08
3800	3" thick		1300	.012		4.13	.56		4.69	5.40
3900	4" thick	▼	900	.018	▼	5.80	.82		6.62	7.60

09 81 Acoustic Insulation

09 81 16 – Acoustic Blanket Insulation

09 81 16.10 Sound Attenuation Blanket		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Labor	Costs Equipment	Total	Total Incl O&P
4000	Nylan matting 0.4" thick, with carbon black spinnerette									
4010	plus polyester fabric, on floor	D-7	1600	.010	S.F.	1.36	.38		1.74	2.05
4200	Fiberglass reinf. backer board underlayment, 7/16" thick, on floor	"	1500	.011	"	1.66	.40		2.06	2.42

09 84 Acoustic Room Components

09 84 13 – Fixed Sound-Absorptive Panels

09 84 13.10 Fixed Panels

0010	FIXED PANELS Perforated steel facing, painted with									
0100	Fiberglass or mineral filler, no backs, 2-1/4" thick, modular									
0200	space units, ceiling or wall hung, white or colored	1 Carp	100	.080	S.F.	8.70	3.67		12.37	15.25
0300	Fiberboard sound deadening panels, 1/2" thick	"	600	.013	"	.33	.61		.94	1.30
0500	Fiberglass panels, 4' x 8' x 1" thick, with									
0600	glass cloth face for walls, cemented	1 Carp	155	.052	S.F.	7.60	2.37		9.97	12
0700	1-1/2" thick, dacron covered, inner aluminum frame,									
0710	wall mounted	1 Carp	300	.027	S.F.	8.90	1.22		10.12	11.70
0900	Mineral fiberboard panels, fabric covered, 30" x 108",									
1000	3/4" thick, concealed spline, wall mounted	1 Carp	150	.053	S.F.	6.40	2.45		8.85	10.80

09 84 36 – Sound-Absorbing Ceiling Units

09 84 36.10 Barriers

0010	BARRIERS Plenum									
0600	Aluminum fail, fiberglass reinf., parallel with joists	1 Carp	275	.029	S.F.	1.05	1.33		2.38	3.22
0700	Perpendicular to joists		180	.044		1.05	2.04		3.09	4.30
0900	Aluminum mesh, kraft paperbacked		275	.029		.79	1.33		2.12	2.93
0970	Fiberglass batts, kraft faced, 3-1/2" thick		1400	.006		.37	.26		.63	.81
0980	6" thick		1300	.006		.66	.28		.94	1.17
1000	Sheet lead, 1 lb., 1/64" thick, perpendicular to joists		150	.053		5.50	2.45		7.95	9.80
1100	Vinyl foam reinforced, 1/8" thick, 1.0 lb. per S.F.	▼	150	.053	▼	4.49	2.45		6.94	8.70

09 91 Painting

09 91 03 – Paint Restoration

09 91 03.20 Sanding

0010	SANDING and puttying interior trim, compared to	R099100-10								
0100	Painting 1 coat, on quality work				L.F.		100%			
0300	Medium work						50%			
0400	Industrial grade						25%			
0500	Surface protection, placement and removal									
0510	Basic drop cloths	1 Pard	6400	.001	S.F.		.05		.05	.07
0520	Masking with paper	▼	800	.010	▼	.04	.40		.44	.64
0530	Volume cover up (using plastic sheathing, or building paper)	▼	16000	.001	▼		.02		.02	.03

09 91 03.30 Exterior Surface Preparation

0010	EXTERIOR SURFACE PREPARATION	R099100-10								
0015	Doors, per side, not incl. frames or trim									
0020	Scrape & sand									
0030	Wood, flush	1 Pard	616	.013	S.F.		.51		.51	.77
0040	Wood, detail	▼	496	.016	▼		.64		.64	.96
0050	Wood, louvered	▼	280	.029	▼		1.13		1.13	1.70
0060	Wood, overhead	▼	616	.013	▼		.51		.51	.77
0070	Wire brush									

09 91 Painting

09 91 03 – Paint Restoration

09 91 03.30 Exterior Surface Preparation		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0080	Metal, flush	1 Pard	640	.013	S.F.		.49		.49	.74
0090	Metal, detail		520	.015			.61		.61	.92
0100	Metal, louvered		360	.022			.88		.88	1.32
0110	Metal or fibr., overhead		640	.013			.49		.49	.74
0120	Metal, roll up		560	.014			.57		.57	.85
0130	Metal, bulkhead	▼	640	.013	▼		.49		.49	.74
0140	Power wash, based on 2500 lb. operating pressure									
0150	Metal, flush	A-1H	2240	.004	S.F.		.13	.03	.16	.24
0160	Metal, detail		2120	.004			.14	.04	.18	.25
0170	Metal, louvered		2000	.004			.15	.04	.19	.27
0180	Metal or fibr., overhead		2400	.003			.12	.03	.15	.22
0190	Metal, roll up		2400	.003			.12	.03	.15	.22
0200	Metal, bulkhead	▼	2200	.004	▼		.13	.03	.16	.25
0400	Windows, per side, not incl. trim									
0410	Scrape & sand									
0420	Wood, 1-2 lite	1 Pard	320	.025	S.F.		.99		.99	1.49
0430	Wood, 3-6 lite		280	.029			1.13		1.13	1.70
0440	Wood, 7-10 lite		240	.033			1.32		1.32	1.98
0450	Wood, 12 lite		200	.040			1.58		1.58	2.38
0460	Wood, Bay/Bow	▼	320	.025	▼		.99		.99	1.49
0470	Wire brush									
0480	Metal, 1-2 lite	1 Pard	480	.017	S.F.		.66		.66	.99
0490	Metal, 3-6 lite		400	.020			.79		.79	1.19
0500	Metal, Bay/Bow	▼	480	.017	▼		.66		.66	.99
0510	Power wash, based on 2500 lb. operating pressure									
0520	1-2 lite	A-1H	4400	.002	S.F.		.07	.02	.09	.12
0530	3-6 lite		4320	.002			.07	.02	.09	.12
0540	7-10 lite		4240	.002			.07	.02	.09	.13
0550	12 lite		4160	.002			.07	.02	.09	.13
0560	Bay/Bow	▼	4400	.002	▼		.07	.02	.09	.12
0600	Siding, scrape and sand, light=10-30%, med.=30-70%									
0610	Heavy=70-100% of surface to sand									
0650	Texture 1-11, light	1 Pard	480	.017	S.F.		.66		.66	.99
0660	Med.		440	.018			.72		.72	1.08
0670	Heavy		360	.022			.88		.88	1.32
0680	Wood shingles, shakes, light		440	.018			.72		.72	1.08
0690	Med.		360	.022			.88		.88	1.32
0700	Heavy		280	.029			1.13		1.13	1.70
0710	Clapboard, light		520	.015			.61		.61	.92
0720	Med.		480	.017			.66		.66	.99
0730	Heavy	▼	400	.020	▼		.79		.79	1.19
0740	Wire brush									
0750	Aluminum, light	1 Pard	600	.013	S.F.		.53		.53	.79
0760	Med.		520	.015			.61		.61	.92
0770	Heavy	▼	440	.018	▼		.72		.72	1.08
0780	Pressure wash, based on 2500 lb. operating pressure									
0790	Stucco	A-1H	3080	.003	S.F.		.10	.02	.12	.18
0800	Aluminum or vinyl		3200	.003			.09	.02	.11	.17
0810	Siding, masonry, brick & block	▼	2400	.003	▼		.12	.03	.15	.22
1300	Miscellaneous, wire brush									
1310	Metal, pedestrian gate	1 Pard	100	.080	S.F.		3.16		3.16	4.76
8000	For chemical washing, see Section 04 01 30									
8010	For steam cleaning, see Section 04 01 30.20									

09 91 Painting

09 91 03 – Paint Restoration

09 91 03.30 Exterior Surface Preparation		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8020	For sand blasting, see Section 03 35 29.60 and 05 01 10.51									
09 91 03.40 Interior Surface Preparation										
0010	INTERIOR SURFACE PREPARATION		R099100-10							
0020	Doors, per side, not incl. frames or trim									
0030	Scrape & sand									
0040	Wood, flush		1 Pord	616	.013	S.F.		.51	.51	.77
0050	Wood, detail			496	.016			.64	.64	.96
0060	Wood, louvered		▼	280	.029	▼		1.13	1.13	1.70
0070	Wire brush									
0080	Metal, flush		1 Pord	640	.013	S.F.		.49	.49	.74
0090	Metal, detail			520	.015			.61	.61	.92
0100	Metal, louvered		▼	360	.022	▼		.88	.88	1.32
0110	Hand wash									
0120	Wood, flush		1 Pord	2160	.004	S.F.		.15	.15	.22
0130	Wood, detailed			2000	.004			.16	.16	.24
0140	Wood, louvered			1360	.006			.23	.23	.35
0150	Metal, flush			2160	.004			.15	.15	.22
0160	Metal, detail			2000	.004			.16	.16	.24
0170	Metal, louvered		▼	1360	.006	▼		.23	.23	.35
0400	Windows, per side, not incl. trim									
0410	Scrape & sand									
0420	Wood, 1-2 lite		1 Pord	360	.022	S.F.		.88	.88	1.32
0430	Wood, 3-6 lite			320	.025			.99	.99	1.49
0440	Wood, 7-10 lite			280	.029			1.13	1.13	1.70
0450	Wood, 12 lite			240	.033			1.32	1.32	1.98
0460	Wood, Bow/Bow		▼	360	.022	▼		.88	.88	1.32
0470	Wire brush									
0480	Metal, 1-2 lite		1 Pord	520	.015	S.F.		.61	.61	.92
0490	Metal, 3-6 lite			440	.018			.72	.72	1.08
0500	Metal, Bow/Bow		▼	520	.015	▼		.61	.61	.92
0600	Walls, sanding, light=10-30%, medium - 30-70%,									
0610	heavy=70-100% of surface to sand									
0650	Walls, sand									
0660	Gypsum board or plaster, light		1 Pord	3077	.003	S.F.		.10	.10	.15
0670	Gypsum board or plaster, medium			2160	.004			.15	.15	.22
0680	Gypsum board or plaster, heavy			923	.009			.34	.34	.52
0690	Wood, T&G, light			2400	.003			.13	.13	.20
0700	Wood, T&G, med.			1600	.005			.20	.20	.30
0710	Wood, T&G, heavy		▼	800	.010	▼		.40	.40	.60
0720	Walls, wash									
0730	Gypsum board or plaster		1 Pord	3200	.003	S.F.		.10	.10	.15
0740	Wood, T&G			3200	.003			.10	.10	.15
0750	Masonry, brick & block, smooth			2800	.003			.11	.11	.17
0760	Masonry, brick & block, coarse		▼	2000	.004	▼		.16	.16	.24
8000	For chemical washing, see Section 04 01 30									
8010	For steam cleaning, see Section 04 01 30.20									
8020	For sand blasting, see Section 03 35 29.60 and 05 01 10.51									

09 91 Painting

09 91 13 – Exterior Painting

09 91 13.30 Fences				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	FENCES		R099100-20									
0100	Chain link or wire metal, one side, water base											
0110	Roll & brush, first coat			1 Pard	960	.008	S.F.	.08	.33		.41	.58
0120	Second coat				1280	.006		.07	.25		.32	.45
0130	Spray, first coat				2275	.004		.08	.14		.22	.29
0140	Second coat			▼	2600	.003	▼	.08	.12		.20	.26
0150	Picket, water base											
0160	Roll & brush, first coat			1 Pard	865	.009	S.F.	.08	.37		.45	.64
0170	Second coat				1050	.008		.08	.30		.38	.54
0180	Spray, first coat				2275	.004		.08	.14		.22	.30
0190	Second coat			▼	2600	.003	▼	.08	.12		.20	.27
0200	Stockade, water base											
0210	Roll & brush, first coat			1 Pard	1040	.008	S.F.	.08	.30		.38	.55
0220	Second coat				1200	.007		.08	.26		.34	.49
0230	Spray, first coat				2275	.004		.08	.14		.22	.30
0240	Second coat			▼	2600	.003	▼	.08	.12		.20	.27
09 91 13.42 Miscellaneous, Exterior												
0010	MISCELLANEOUS, EXTERIOR		R099100-20									
0015	For painting metals, see Section 09 97 13.23											
0100	Railing, ext., decorative wood, incl. cap & baluster											
0110	Newels & spindles @ 12" O.C.											
0120	Brushwork, stain, sand, seal & varnish											
0130	First coat			1 Pard	90	.089	L.F.	.75	3.52		4.27	6.10
0140	Second coat			"	120	.067	"	.75	2.64		3.39	4.79
0150	Rough sawn wood, 42" high, 2" x 2" verticals, 6" O.C.											
0160	Brushwork, stain, each coat			1 Pard	90	.089	L.F.	.24	3.52		3.76	5.55
0170	Wrought iron, 1" rail, 1/2" sq. verticals											
0180	Brushwork, zinc chromate, 60" high, bars 6" O.C.											
0190	Primer			1 Pard	130	.062	L.F.	.86	2.43		3.29	4.61
0200	Finish coat				130	.062		1.13	2.43		3.56	4.90
0210	Additional coat			▼	190	.042	▼	1.32	1.67		2.99	3.96
0220	Shutters or blinds, single panel, 2' x 4', paint all sides											
0230	Brushwork, primer			1 Pard	20	.400	Eo.	.69	15.80		16.49	25
0240	Finish coat, exterior latex				20	.400		.61	15.80		16.41	24.50
0250	Primer & 1 coat, exterior latex				13	.615		1.15	24.50		25.65	38
0260	Spray, primer				35	.229		1	9.05		10.05	14.70
0270	Finish coat, exterior latex				35	.229		1.30	9.05		10.35	15.05
0280	Primer & 1 coat, exterior latex			▼	20	.400	▼	1.08	15.80		16.88	25
0290	For louvered shutters, add						S.F.	10%				
0300	Stair stringers, exterior, metal											
0310	Roll & brush, zinc chromate, to 14", each coat			1 Pard	320	.025	L.F.	.38	.99		1.37	1.90
0320	Rough sawn wood, 4" x 12"											
0330	Roll & brush, exterior latex, each coat			1 Pard	215	.037	L.F.	.09	1.47		1.56	2.31
0340	Trellis/lattice, 2" x 2" @ 3" O.C. with 2" x 8" supports											
0350	Spray, latex, per side, each coat			1 Pard	475	.017	S.F.	.09	.67		.76	1.10
0450	Decking, ext., sealer, alkyd, brushwork, sealer coat				1140	.007		.09	.28		.37	.52
0460	1st coat				1140	.007		.09	.28		.37	.52
0470	2nd coat				1300	.006		.07	.24		.31	.45
0500	Paint, alkyd, brushwork, primer coat				1140	.007		.10	.28		.38	.53
0510	1st coat				1140	.007		.16	.28		.44	.59
0520	2nd coat				1300	.006		.12	.24		.36	.50
0600	Sand point, alkyd, brushwork, 1 coat			▼	150	.053		.13	2.11		2.24	3.31

09 91 Painting

09 91 13 – Exterior Painting

09 91 13.60 Siding Exterior				Daily Crew Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0010	SIDING EXTERIOR , Alkyd (oil base)	R099100-10									
0450	Steel siding, oil base, point 1 coat, brushwork		2 Pord	2015	.008	S.F.	.13	.31		.44	.61
0500	Spray	R099100-20		4550	.004		.19	.14		.33	.42
0800	Point 2 coats, brushwork			1300	.012		.25	.49		.74	1.01
1000	Spray			2750	.006		.17	.23		.40	.54
1200	Stucco, rough, oil base, point 2 coats, brushwork			1300	.012		.25	.49		.74	1.01
1400	Roller			1625	.010		.27	.39		.66	.88
1600	Spray			2925	.005		.28	.22		.50	.64
1800	Texture 1-11 or clapboard, oil base, primer coat, brushwork			1300	.012		.13	.49		.62	.88
2000	Spray			4550	.004		.13	.14		.27	.36
2400	Point 2 coats, brushwork			810	.020		.37	.78		1.15	1.58
2600	Spray			2600	.006		.41	.24		.65	.82
3400	Stain 2 coats, brushwork			950	.017		.16	.67		.83	1.18
4000	Spray			3050	.005		.18	.21		.39	.51
4200	Wood shingles, oil base primer coat, brushwork			1300	.012		.12	.49		.61	.87
4400	Spray			3900	.004		.12	.16		.28	.37
5000	Paint 2 coats, brushwork			810	.020		.31	.78		1.09	1.52
5200	Spray			2275	.007		.29	.28		.57	.74
6500	Stain 2 coats, brushwork			950	.017		.16	.67		.83	1.18
7000	Spray		▼	2660	.006		.22	.24		.46	.61
8000	For latex paint, deduct						10%				
8100	For work over 12' H, from pipe scaffolding, add							15%			
8200	For work over 12' H, from extension ladder, add							25%			
8300	For work over 12' H, from swing staging, add					▼		35%			

09 91 13.62 Siding, Misc.

0010	SIDING, MISC. , latex paint	R099100-10									
0100	Aluminum siding										
0110	Brushwork, primer	R099100-20	2 Pord	2275	.007	S.F.	.06	.28		.34	.49
0120	Finish coat, exterior latex			2275	.007		.05	.28		.33	.48
0130	Primer & 1 coat exterior latex			1300	.012		.13	.49		.62	.87
0140	Primer & 2 coats exterior latex		▼	975	.016	▼	.18	.65		.83	1.18
0150	Mineral fiber shingles										
0160	Brushwork, primer		2 Pord	1495	.011	S.F.	.13	.42		.55	.79
0170	Finish coat, industrial enamel			1495	.011		.18	.42		.60	.84
0180	Primer & 1 coat enamel			810	.020		.32	.78		1.10	1.53
0190	Primer & 2 coats enamel			540	.030		.50	1.17		1.67	2.31
0200	Roll, primer			1625	.010		.15	.39		.54	.75
0210	Finish coat, industrial enamel			1625	.010		.20	.39		.59	.81
0220	Primer & 1 coat enamel			975	.016		.35	.65		1	1.36
0230	Primer & 2 coats enamel			650	.025		.54	.97		1.51	2.06
0240	Spray, primer			3900	.004		.12	.16		.28	.37
0250	Finish coat, industrial enamel			3900	.004		.16	.16		.32	.42
0260	Primer & 1 coat enamel			2275	.007		.28	.28		.56	.73
0270	Primer & 2 coats enamel			1625	.010		.44	.39		.83	1.08
0280	Waterproof sealer, first coat			4485	.004		.08	.14		.22	.29
0290	Second coat		▼	5235	.003	▼	.07	.12		.19	.26
0300	Rough wood incl. shingles, shakes or rough sown siding										
0310	Brushwork, primer		2 Pord	1280	.013	S.F.	.14	.49		.63	.89
0320	Finish coat, exterior latex			1280	.013		.10	.49		.59	.85
0330	Primer & 1 coat exterior latex			960	.017		.23	.66		.89	1.25
0340	Primer & 2 coats exterior latex			700	.023		.33	.90		1.23	1.72
0350	Roll, primer		▼	2925	.005	▼	.18	.22		.40	.53

09 91 Painting

09 91 13 – Exterior Painting

09 91 13.62 Siding, Misc.		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0360	Finish coat, exterior latex	2 Pard	2925	.005	S.F.	.12	.22		.34	.46
0370	Primer & 1 coat exterior latex		1790	.009		.30	.35		.65	.86
0380	Primer & 2 coats exterior latex		1300	.012		.42	.49		.91	1.19
0390	Spray, primer		3900	.004		.16	.16		.32	.41
0400	Finish coat, exterior latex		3900	.004		.09	.16		.25	.34
0410	Primer & 1 coat exterior latex		2600	.006		.25	.24		.49	.64
0420	Primer & 2 coats exterior latex		2080	.008		.33	.30		.63	.83
0430	Waterproof sealer, first coat		4485	.004		.14	.14		.28	.36
0440	Second coat	▼	4485	.004	▼	.08	.14		.22	.29
0450	Smooth wood incl. butt, T&G, beveled, drop or B&B siding									
0460	Brushwork, primer	2 Pard	2325	.007*	S.F.	.10	.27		.37	.52
0470	Finish coat, exterior latex		1280	.013		.10	.49		.59	.85
0480	Primer & 1 coat exterior latex		800	.020		.20	.79		.99	1.41
0490	Primer & 2 coats exterior latex		630	.025		.29	1		1.29	1.83
0500	Roll, primer		2275	.007		.11	.28		.39	.54
0510	Finish coat, exterior latex		2275	.007		.10	.28		.38	.53
0520	Primer & 1 coat exterior latex		1300	.012		.21	.49		.70	.97
0530	Primer & 2 coats exterior latex		975	.016		.32	.65		.97	1.33
0540	Spray, primer		4550	.004		.09	.14		.23	.30
0550	Finish coat, exterior latex		4550	.004		.09	.14		.23	.31
0560	Primer & 1 coat exterior latex		2600	.006		.18	.24		.42	.56
0570	Primer & 2 coats exterior latex		1950	.008		.26	.32		.58	.78
0580	Waterproof sealer, first coat		5230	.003		.08	.12		.20	.26
0590	Second coat	▼	5980	.003		.08	.11		.19	.24
0600	For oil base paint, add				▼	10%				

09 91 13.70 Doors and Windows, Exterior

0010	DOORS AND WINDOWS, EXTERIOR	R099100-10								
0100	Door frames & trim, only									
0110	Brushwork, primer	R099100-20	1 Pard	512	.016	L.F.	.06	.62	.68	1
0120	Finish coat, exterior latex			512	.016		.08	.62	.70	1.01
0130	Primer & 1 coat, exterior latex			300	.027		.14	1.05	1.19	1.74
0140	Primer & 2 coats, exterior latex		▼	265	.030	▼	.22	1.19	1.41	2.04
0150	Doors, flush, both sides, incl. frame & trim									
0160	Roll & brush, primer		1 Pard	10	.800	Eo.	4.74	31.50	36.24	52.50
0170	Finish coat, exterior latex			10	.800		5.85	31.50	37.35	54
0180	Primer & 1 coat, exterior latex			7	1.143		10.55	45	55.55	79.50
0190	Primer & 2 coats, exterior latex			5	1.600		16.40	63.50	79.90	113
0200	Brushwork, stoin, sealer & 2 coats polyurethane		▼	4	2	▼	26	79	105	148
0210	Doors, French, both sides, 10-15 lite, incl. frame & trim									
0220	Brushwork, primer		1 Pard	6	1.333	Eo.	2.37	52.50	54.87	82
0230	Finish coat, exterior latex			6	1.333		2.92	52.50	55.42	82.50
0240	Primer & 1 coat, exterior latex			3	2.667		5.30	105	110.30	165
0250	Primer & 2 coats, exterior latex			2	4		8.05	158	166.05	247
0260	Brushwork, stoin, sealer & 2 coats polyurethane		▼	2.50	3.200	▼	9.45	127	136.45	200
0270	Doors, louvered, both sides, incl. frame & trim									
0280	Brushwork, primer		1 Pard	7	1.143	Eo.	4.74	45	49.74	73
0290	Finish coat, exterior latex			7	1.143		5.85	45	50.85	74.50
0300	Primer & 1 coat, exterior latex			4	2		10.55	79	89.55	131
0310	Primer & 2 coats, exterior latex			3	2.667		16.05	105	121.05	177
0320	Brushwork, stoin, sealer & 2 coats polyurethane		▼	4.50	1.778	▼	26	70.50	96.50	135
0330	Doors, panel, both sides, incl. frame & trim									
0340	Roll & brush, primer		1 Pard	6	1.333	Eo.	4.74	52.50	57.24	84.50

09 91 Painting

09 91 13 – Exterior Painting

09 91 13.70 Doors and Windows, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0350	Finish coat, exterior latex	1 Pard	6	1.333	Ea.	5.85	52.50		58.35	86
0360	Primer & 1 coat, exterior latex		3	2.667		10.55	105		115.55	171
0370	Primer & 2 coats, exterior latex		2.50	3.200		16.05	127		143.05	208
0380	Brushwork, stain, sealer & 2 coats polyurethane	▼	3	2.667	▼	26	105		131	188
0400	Windows, per ext. side, based on 15 S.F.									
0410	1 to 6 lite									
0420	Brushwork, primer	1 Pard	13	.615	Ea.	.94	24.50		25.44	37.50
0430	Finish coat, exterior latex		13	.615		1.15	24.50		25.65	38
0440	Primer & 1 coat, exterior latex		8	1		2.09	39.50		41.59	62
0450	Primer & 2 coats, exterior latex		6	1.333		3.17	52.50		55.67	83
0460	Stain, sealer & 1 coat varnish	▼	7	1.143	▼	3.73	45		48.73	72
0470	7 to 10 lite									
0480	Brushwork, primer	1 Pard	11	.727	Ea.	.94	29		29.94	44.50
0490	Finish coat, exterior latex		11	.727		1.15	29		30.15	45
0500	Primer & 1 coat, exterior latex		7	1.143		2.09	45		47.09	70.50
0510	Primer & 2 coats, exterior latex		5	1.600		3.17	63.50		66.67	98.50
0520	Stain, sealer & 1 coat varnish	▼	6	1.333	▼	3.73	52.50		56.23	83.50
0530	12 lite									
0540	Brushwork, primer	1 Pard	10	.800	Ea.	.94	31.50		32.44	48.50
0550	Finish coat, exterior latex		10	.800		1.15	31.50		32.65	49
0560	Primer & 1 coat, exterior latex		6	1.333		2.09	52.50		54.59	82
0570	Primer & 2 coats, exterior latex		5	1.600		3.17	63.50		66.67	98.50
0580	Stain, sealer & 1 coat varnish	▼	6	1.333	▼	3.87	52.50		56.37	84
0590	For oil base point, add					10%				

09 91 13.80 Trim, Exterior

0010	TRIM, EXTERIOR	R099100-10								
0100	Door frames & trim (see Doors, interior or exterior)									
0110	Fascia, latex paint, one coat coverage	R099100-20								
0120	1" x 4", brushwork	1 Pard	640	.013	L.F.	.02	.49		.51	.76
0130	Roll		1280	.006		.03	.25		.28	.40
0140	Spray		2080	.004		.02	.15		.17	.25
0150	1" x 6" to 1" x 10", brushwork		640	.013		.08	.49		.57	.83
0160	Roll		1230	.007		.09	.26		.35	.48
0170	Spray		2100	.004		.07	.15		.22	.30
0180	1" x 12", brushwork		640	.013		.08	.49		.57	.83
0190	Roll		1050	.008		.09	.30		.39	.54
0200	Spray		2200	.004		.07	.14		.21	.29
0210	Gutters & downspouts, metal, zinc chromate paint									
0220	Brushwork, gutters, 5", first coat	1 Pard	640	.013	L.F.	.40	.49		.89	1.18
0230	Second coat		960	.008		.38	.33		.71	.91
0240	Third coat		1280	.006		.30	.25		.55	.71
0250	Downspouts, 4", first coat		640	.013		.40	.49		.89	1.18
0260	Second coat		960	.008		.38	.33		.71	.91
0270	Third coat		1280	.006		.30	.25		.55	.71
0280	Gutters & downspouts, wood									
0290	Brushwork, gutters, 5", primer	1 Pard	640	.013	L.F.	.06	.49		.55	.81
0300	Finish coat, exterior latex		640	.013		.07	.49		.56	.82
0310	Primer & 1 coat exterior latex		400	.020		.14	.79		.93	1.34
0320	Primer & 2 coats exterior latex		325	.025		.22	.97		1.19	1.70
0330	Downspouts, 4", primer		640	.013		.06	.49		.55	.81
0340	Finish coat, exterior latex		640	.013		.07	.49		.56	.82
0350	Primer & 1 coat exterior latex		400	.020		.14	.79		.93	1.34

09 91 Painting

09 91 13 – Exterior Painting

09 91 13.80 Trim, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0360	Primer & 2 coats exterior latex	1 Pard	325	.025	L.F.	.11	.97		1.08	1.58
0370	Molding, exterior, up to 14" wide									
0380	Brushwork, primer	1 Pard	640	.013	L.F.	.07	.49		.56	.82
0390	Finish coat, exterior latex		640	.013		.08	.49		.57	.83
0400	Primer & 1 coat exterior latex		400	.020		.17	.79		.96	1.37
0410	Primer & 2 coats exterior latex		315	.025		.17	1		1.17	1.69
0420	Stain & fill		1050	.008		.10	.30		.40	.56
0430	Shellac		1850	.004		.13	.17		.30	.40
0440	Varnish		1275	.006		.11	.25		.36	.49

09 91 13.90 Walls, Masonry (CMU), Exterior

0010	WALLS, MASONRY (CMU), EXTERIOR	R099100-10								
0360	Concrete masonry units (CMU), smooth surface									
0370	Brushwork, latex, first coat	1 Pard	640	.013	S.F.	.07	.49		.56	.82
0380	Second coat		960	.008		.06	.33		.39	.56
0390	Waterproof sealer, first coat		736	.011		.25	.43		.68	.92
0400	Second coat		1104	.007		.25	.29		.54	.70
0410	Roll, latex, paint, first coat		1465	.005		.09	.22		.31	.41
0420	Second coat		1790	.004		.07	.18		.25	.34
0430	Waterproof sealer, first coat		1680	.005		.25	.19		.44	.55
0440	Second coat		2060	.004		.25	.15		.40	.50
0450	Spray, latex, paint, first coat		1950	.004		.07	.16		.23	.31
0460	Second coat		2600	.003		.05	.12		.17	.24
0470	Waterproof sealer, first coat		2245	.004		.25	.14		.39	.48
0480	Second coat	▼	2990	.003	▼	.25	.11		.36	.43
0490	Concrete masonry unit (CMU), parous									
0500	Brushwork, latex, first coat	1 Pard	640	.013	S.F.	.14	.49		.63	.90
0510	Second coat		960	.008		.07	.33		.40	.58
0520	Waterproof sealer, first coat		736	.011		.25	.43		.68	.92
0530	Second coat		1104	.007		.25	.29		.54	.70
0540	Roll latex, first coat		1465	.005		.11	.22		.33	.44
0550	Second coat		1790	.004		.07	.18		.25	.35
0560	Waterproof sealer, first coat		1680	.005		.25	.19		.44	.55
0570	Second coat		2060	.004		.25	.15		.40	.50
0580	Sproy latex, first coat		1950	.004		.08	.16		.24	.33
0590	Second coat		2600	.003		.05	.12		.17	.24
0600	Waterproof sealer, first coat		2245	.004		.25	.14		.39	.48
0610	Second coat	▼	2990	.003	▼	.25	.11		.36	.43

09 91 23 – Interior Painting

09 91 23.20 Cabinets and Casework

0010	CABINETS AND CASEWORK	R099100-10								
1000	Primer coat, oil base, brushwork	1 Pard	650	.012	S.F.	.06	.49		.55	.80
2000	Paint, oil base, brushwork, 1 coat	R099100-20		650	.012		.11	.49	.60	.85
3000	Stain, brushwork, wipe off		650	.012		.08	.49		.57	.82
4000	Shellac, 1 coat, brushwork		650	.012		.10	.49		.59	.85
4500	Varnish, 3 coats, brushwork, sand after 1st coat	▼	325	.025			.97		1.25	1.77
5000	For latex point, deduct				▼	10%				

09 91 23.33 Doors and Windows, Interior Alkyd (Oil Base)

0010	DOORS AND WINDOWS, INTERIOR ALKYD (OIL BASE)	R099100-10								
0500	Flush door & frame, 3' x 7', oil, primer, brushwork	1 Pard	10	.800	Ea.	3.32	31.50		34.82	51
1000	Paint, 1 coat	R099100-20		10	.800		4.11	31.50	35.61	52
1400	Stain, brushwork, wipe off		18	.444		1.71	17.60		19.31	28.50
1600	Shellac, 1 coat, brushwork	▼	25	.320	▼	2.20	12.65		14.85	21.50

09 91 Painting

09 91 23 – Interior Painting

09 91 23.33 Doors and Windows, Interior Alkyd (Oil Base)		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1800	Vornish, 3 coats, brushwork, sand after 1st coat	1 Pord	9	.889	Eo.	5.95	35		40.95	59.50
2000	Panel door & frame, 3' x 7', oil, primer, brushwork		6	1.333		2.44	52.50		54.94	82
2200	Point, 1 coat		6	1.333		4.11	52.50		56.61	84
2600	Stain, brushwork, panel door, 3' x 7', not incl. frame		16	.500		1.71	19.80		21.51	32
2800	Shelloc, 1 coat, brushwork		22	.364		2.20	14.40		16.60	24
3000	Vornish, 3 coats, brushwork, sand after 1st coat		7.50	1.067		5.95	42		47.95	70
4400	Windows, including frame and trim, per side									
4600	Colonial type, 6/6 lites, 2' x 3', oil, primer, brushwork	1 Pord	14	.571	Eo.	.38	22.50		22.88	34.50
5800	Point, 1 coat		14	.571		.65	22.50		23.15	34.50
6200	3' x 5' opening, 6/6 lites, primer coat, brushwork		12	.667		.96	26.50		27.46	40.50
6400	Point, 1 coat		12	.667		1.62	26.50		28.12	41.50
6800	4' x 8' opening, 6/6 lites, primer coat, brushwork		8	1		2.05	39.50		41.55	62
7000	Point, 1 coat		8	1		3.46	39.50		42.96	63.50
8000	Single lite type, 2' x 3', oil base, primer coat, brushwork		33	.242		.38	9.60		9.98	14.80
8200	Point, 1 coat		33	.242		.65	9.60		10.25	15.10
8600	3' x 5' opening, primer coat, brushwork		20	.400		.96	15.80		16.76	25
8800	Point, 1 coat		20	.400		1.62	15.80		17.42	26
9200	4' x 8' opening, primer coat, brushwork		14	.571		2.05	22.50		24.55	36.50
9400	Point, 1 coat		14	.571		3.46	22.50		25.96	38

09 91 23.35 Doors and Windows, Interior Latex

0010	DOORS & WINDOWS, INTERIOR LATEX	R099100-10								
0100	Doors, flush, both sides, incl. frame & trim									
0110	Roll & brush, primer	R099100-20	1 Pord	10	.800	Eo.	3.97	31.50	35.47	52
0120	Finish coat, latex			10	.800		5.35	31.50	36.85	53.50
0130	Primer & 1 coat latex			7	1.143		9.35	45	54.35	78.50
0140	Primer & 2 coats latex			5	1.600		14.40	63.50	77.90	111
0160	Spray, both sides, primer			20	.400		4.18	15.80	19.98	28.50
0170	Finish coat, latex			20	.400		5.65	15.80	21.45	30
0180	Primer & 1 coat latex			11	.727		9.90	29	38.90	54.50
0190	Primer & 2 coats latex			8	1		15.25	39.50	54.75	76.50
0200	Doors, French, both sides, 10-15 lite, incl. frame & trim									
0210	Roll & brush, primer		1 Pord	6	1.333	Eo.	1.99	52.50	54.49	81.50
0220	Finish coat, latex			6	1.333		2.68	52.50	55.18	82.50
0230	Primer & 1 coat latex			3	2.667		4.67	105	109.67	164
0240	Primer & 2 coats latex			2	4		7.20	158	165.20	246
0260	Doors, louvered, both sides, incl. frame & trim									
0270	Roll & brush, primer		1 Pord	7	1.143	Eo.	3.97	45	48.97	72.50
0280	Finish coat, latex			7	1.143		5.35	45	50.35	74
0290	Primer & 1 coat, latex			4	2		9.10	79	88.10	129
0300	Primer & 2 coats, latex			3	2.667		14.70	105	119.70	175
0320	Spray, both sides, primer			20	.400		4.18	15.80	19.98	28.50
0330	Finish coat, latex			20	.400		5.65	15.80	21.45	30
0340	Primer & 1 coat, latex			11	.727		9.90	29	38.90	54.50
0350	Primer & 2 coats, latex			8	1		15.55	39.50	55.05	76.50
0360	Doors, panel, both sides, incl. frame & trim									
0370	Roll & brush, primer		1 Pord	6	1.333	Eo.	4.18	52.50	56.68	84
0380	Finish coat, latex			6	1.333		5.35	52.50	57.85	85.50
0390	Primer & 1 coat, latex			3	2.667		9.35	105	114.35	169
0400	Primer & 2 coats, latex			2.50	3.200		14.70	127	141.70	206
0420	Spray, both sides, primer			10	.800		4.18	31.50	35.68	52
0430	Finish coat, latex			10	.800		5.65	31.50	37.15	53.50
0440	Primer & 1 coat, latex			5	1.600		9.90	63.50	73.40	106

09 91 Painting

09 91 23 – Interior Painting

09 91 23.35 Doors and Windows, Interior Latex		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0450	Primer & 2 coats, lotex	1 Pord	4	2	Ea.	15.55	79		94.55	136
0460	Windows, per interior side, based on 15 S.F.									
0470	1 to 6 lite									
0480	Brushwork, primer	1 Pord	13	.615	Ea.	.78	24.50		25.28	37.50
0490	Finish coat, enamel		13	.615		1.06	24.50		25.56	37.50
0500	Primer & 1 coat enamel		8	1		1.84	39.50		41.34	61.50
0510	Primer & 2 coats enamel		6	1.333		2.90	52.50		55.40	82.50
0530	7 to 10 lite									
0540	Brushwork, primer	1 Pord	11	.727	Ea.	.78	29		29.78	44.50
0550	Finish coat, enamel		11	.727		1.06	29		30.06	44.50
0560	Primer & 1 coat enamel		7	1.143		1.84	45		46.84	70
0570	Primer & 2 coats enamel		5	1.600		2.90	63.50		66.40	98
0590	12 lite									
0600	Brushwork, primer	1 Pord	10	.800	Ea.	.78	31.50		32.28	48.50
0610	Finish coat, enamel		10	.800		1.06	31.50		32.56	48.50
0620	Primer & 1 coat enamel		6	1.333		1.84	52.50		54.34	81.50
0630	Primer & 2 coats enamel		5	1.600		2.90	63.50		66.40	98
0650	For oil base paint, add					10%				

09 91 23.39 Doors and Windows, Interior Latex, Zero Voc

0010 DOORS & WINDOWS, INTERIOR LATEX, ZERO VOC										
0100	Doors flush, both sides, incl. frame & trim									
0110	Roll & brush, primer	G	1 Pord	10	.800	Ea.	4.84	31.50	36.34	53
0120	Finish coat, lotex	G		10	.800		5.65	31.50	37.15	53.50
0130	Primer & 1 coat lotex	G		7	1.143		10.45	45	55.45	79.50
0140	Primer & 2 coats lotex	G		5	1.600		15.80	63.50	79.30	112
0160	Spray, both sides, primer	G		20	.400		5.10	15.80	20.90	29.50
0170	Finish coat, lotex	G		20	.400		5.90	15.80	21.70	30.50
0180	Primer & 1 coat lotex	G		11	.727		11.10	29	40.10	55.50
0190	Primer & 2 coats lotex	G		8	1		16.70	39.50	56.20	78
0200	Doors, French, both sides, 10-15 lite, incl. frame & trim									
0210	Roll & brush, primer	G	1 Pord	6	1.333	Ea.	2.42	52.50	54.92	82
0220	Finish coat, lotex	G		6	1.333		2.81	52.50	55.31	82.50
0230	Primer & 1 coat lotex	G		3	2.667		5.25	105	110.25	165
0240	Primer & 2 coats lotex	G		2	4		7.90	158	165.90	247
0360	Doors, panel, both sides, incl. frame & trim									
0370	Roll & brush, primer	G	1 Pord	6	1.333	Ea.	5.10	52.50	57.60	85
0380	Finish coat, lotex	G		6	1.333		5.65	52.50	58.15	85.50
0390	Primer & 1 coat, lotex	G		3	2.667		10.45	105	115.45	171
0400	Primer & 2 coats, lotex	G		2.50	3.200		16.10	127	143.10	208
0420	Spray, both sides, primer	G		10	.800		5.10	31.50	36.60	53
0430	Finish coat, lotex	G		10	.800		5.90	31.50	37.40	54
0440	Primer & 1 coat, lotex	G		5	1.600		11.10	63.50	74.60	107
0450	Primer & 2 coats, lotex	G		4	2		17.05	79	96.05	138
0460	Windows, per interior side, based on 15 S.F.									
0470	1 to 6 lite									
0480	Brushwork, primer	G	1 Pord	13	.615	Ea.	.96	24.50	25.46	37.50
0490	Finish coat, enamel	G		13	.615		1.11	24.50	25.61	37.50
0500	Primer & 1 coat enamel	G		8	1		2.07	39.50	41.57	62
0510	Primer & 2 coats enamel	G		6	1.333		3.18	52.50	55.68	83

09 91 Painting

09 91 23 – Interior Painting

09 91 23.40 Floors, Interior				Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	FLOORS, INTERIOR		R099100-10									
0100	Concrete paint, latex											
0110	Brushwork											
0120	1st coat			1 Pard	975	.008	S.F.	.15	.32		.47	.66
0130	2nd coat				1150	.007		.10	.28		.38	.52
0140	3rd coat			▼	1300	.006	▼	.08	.24		.32	.46
0150	Roll											
0160	1st coat			1 Pard	2600	.003	S.F.	.20	.12		.32	.40
0170	2nd coat				3250	.002		.12	.10		.22	.28
0180	3rd coat			▼	3900	.002	▼	.09	.08		.17	.22
0190	Spray											
0200	1st coat			1 Pard	2600	.003	S.F.	.18	.12		.30	.37
0210	2nd coat				3250	.002		.10	.10		.20	.26
0220	3rd coat			▼	3900	.002	▼	.08	.08		.16	.20
0300	Acid stain and sealer											
0310	Stain, one coat			1 Pard	650	.012	S.F.	.11	.49		.60	.85
0320	Two coats				570	.014		.22	.56		.78	1.08
0330	Acrylic sealer, one coat				2600	.003		.18	.12		.30	.38
0340	Two coats			▼	1400	.006	▼	.37	.23		.60	.75

09 91 23.52 Miscellaneous, Interior

0010	MISCELLANEOUS, INTERIOR		R099100-10									
2400	Floors, conc./wood, oil base, primer/sealer coat, brushwork			2 Pard	1950	.008	S.F.	.08	.32		.40	.58
2450	Roller				5200	.003		.09	.12		.21	.28
2600	Sproy				6000	.003		.09	.11		.20	.26
2650	Paint 1 coat, brushwork				1950	.008		.08	.32		.40	.58
2800	Roller				5200	.003		.08	.12		.20	.27
2850	Sproy				6000	.003		.09	.11		.20	.26
3000	Stain, wood floor, brushwork, 1 coat				4550	.004		.08	.14		.22	.30
3200	Roller				5200	.003		.09	.12		.21	.27
3250	Spray				6000	.003		.09	.11		.20	.25
3400	Varnish, wood floor, brushwork				4550	.004		.09	.14		.23	.31
3450	Roller				5200	.003		.10	.12		.22	.29
3600	Sproy			▼	6000	.003	▼	.11	.11		.22	.28
3650	For dust proofing or anti skid, see Section 03 35 29.30											
3800	Grilles, per side, oil base, primer coat, brushwork			1 Pard	520	.015	S.F.	.13	.61		.74	1.06
3850	Sproy				1140	.007		.13	.28		.41	.57
3920	Paint 2 coats, brushwork				325	.025		.42	.97		1.39	1.92
3940	Spray			▼	650	.012	▼	.48	.49		.97	1.26
5000	Pipe, 1" - 4" diameter, primer or sealer coat, oil base, brushwork			2 Pard	1250	.013	L.F.	.09	.51		.60	.86
5100	Sproy				2165	.007		.08	.29		.37	.53
5350	Paint 2 coats, brushwork				775	.021		.19	.82		1.01	1.44
5400	Spray				1240	.013		.22	.51		.73	1.01
6300	13" - 16" diameter, primer or sealer coat, brushwork				310	.052		.35	2.04		2.39	3.46
6350	Spray				540	.030		.39	1.17		1.56	2.19
6500	Paint 2 coats, brushwork				195	.082		.78	3.25		4.03	5.75
6550	Spray			▼	310	.052	▼	.86	2.04		2.90	4.02
7000	Trim, wood, incl. puttying, under 6" wide											
7200	Primer coat, oil base, brushwork			1 Pard	650	.012	L.F.	.03	.49		.52	.77
7250	Paint, 1 coat, brushwork				650	.012		.05	.49		.54	.79
7450	3 coats				325	.025		.16	.97		1.13	1.63
7500	Over 6" wide, primer coat, brushwork				650	.012		.06	.49		.55	.80
7550	Paint, 1 coat, brushwork			▼	650	.012	▼	.11	.49		.60	.85

09 91 Painting

09 91 23 – Interior Painting

09 91 23.52 Miscellaneous, Interior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
7650	3 coats	1 Pord	325	.025	L.F.	.31	.97		1.28	1.80
8000	Cornice, simple design, primer coat, oil base, brushwork		650	.012	S.F.	.06	.49		.55	.80
8250	Point, 1 coat		650	.012		.11	.49		.60	.85
8350	Ornote design, primer coat		350	.023		.06	.90		.96	1.43
8400	Point, 1 coat		350	.023		.11	.90		1.01	1.48
8600	Bolustrades, primer coat, oil base, brushwork		520	.015		.06	.61		.67	.99
8650	Point, 1 coat		520	.015		.11	.61		.72	1.04
8900	Trusses and wood frames, primer coat, oil base, brushwork		800	.010		.06	.40		.46	.67
8950	Sproy		1200	.007		.07	.26		.33	.47
9220	Point 2 coats, brushwork		500	.016		.21	.63		.84	1.18
9240	Sproy		600	.013		.23	.53		.76	1.05
9260	Stain, brushwork, wipe off		600	.013		.08	.53		.61	.88
9280	Vornish, 3 coats, brushwork	▼	275	.029		.28	1.15		1.43	2.04
9350	For lotex point, deduct				▼	10%				

09 91 23.62 Electrostatic Painting

0010	ELECTROSTATIC PAINTING									
0100	In shop									
0200	Flat surfaces (lockers, cosework, elevator doors. etc.)									
0300	One coat	1 Pord	200	.040	S.F.	.53	1.58		2.11	2.96
0400	Two coats	"	120	.067	"	.77	2.64		3.41	4.81
0500	Irregular surfaces (furniture, door frames, etc.)									
0600	One coat	1 Pord	150	.053	S.F.	.53	2.11		2.64	3.75
0700	Two coats	"	100	.080	"	.77	3.16		3.93	5.60
0800	On site									
0900	Flat surfaces (lockers, cosework, elevator doors, etc.)									
1000	One coat	1 Pord	150	.053	S.F.	.53	2.11		2.64	3.75
1100	Two coats	"	100	.080	"	.77	3.16		3.93	5.60
1200	Irregular surfaces (furniture, door frames, etc)									
1300	One coat	1 Pord	115	.070	S.F.	.53	2.75		3.28	4.72
1400	Two coats	"	70	.114	"	.77	4.52		5.29	7.65

09 91 23.72 Walls and Ceilings, Interior

0010	WALLS AND CEILINGS, INTERIOR	R099100-10								
0100	Concrete, drywall or plaster, lotex , primer or sealer coat	R099100-20								
0200	Smooth finish, brushwork		1 Pord	1150	.007	S.F.	.06	.28	.34	.48
0240	Roller			1350	.006		.06	.23	.29	.42
0280	Sproy			2750	.003		.05	.12	.17	.23
0300	Sond finish, brushwork			975	.008		.06	.32	.38	.56
0340	Roller			1150	.007		.06	.28	.34	.48
0380	Sproy			2275	.004		.05	.14	.19	.27
0800	Point 2 coats, smooth finish, brushwork			680	.012		.13	.47	.60	.84
0840	Roller			800	.010		.13	.40	.53	.74
0880	Sproy			1625	.005		.12	.19	.31	.42
0900	Sond finish, brushwork			605	.013		.13	.52	.65	.93
0940	Roller			1020	.008		.13	.31	.44	.61
0980	Sproy			1700	.005		.12	.19	.31	.41
1200	Point 3 coats, smooth finish, brushwork			510	.016		.19	.62	.81	1.14
1240	Roller			650	.012		.19	.49	.68	.94
1280	Sproy			1625	.005		.18	.19	.37	.49
1600	Gloze coating, 2 coats, sproy, clear			1200	.007		.49	.26	.75	.94
1640	Multicolor	▼		1200	.007		.98	.26	1.24	1.48
1660	Pointing walls, complete, including surface prep, primer &									
1670	2 coats finish, on drywall or plaster, with roller		1 Pord	325	.025	S.F.	.20	.97	1.17	1.67

09 91 Painting

09 91 23 – Interior Painting

09 91 23.72 Walls and Ceilings, Interior		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1700	For oil base paint, odd				S.F.	10%				
1800	For ceiling installations, odd				▼		25%			
2000	Masonry or concrete block, primer/sealer, latex paint									
2100	Primer, smooth finish, brushwork	1 Pord	1000	.008	S.F.	.10	.32		.42	.59
2110	Roller		1150	.007		.10	.28		.38	.52
2180	Spray		2400	.003		.09	.13		.22	.30
2200	Sand finish, brushwork		850	.009		.10	.37		.47	.67
2210	Roller		975	.008		.10	.32		.42	.60
2280	Spray		2050	.004		.09	.15		.24	.33
2400	Finish coat, smooth finish, brush		1100	.007		.08	.29		.37	.52
2410	Roller		1300	.006		.08	.24		.32	.46
2480	Spray		2400	.003		.07	.13		.20	.28
2500	Sand finish, brushwork		950	.008		.08	.33		.41	.59
2510	Roller		1090	.007		.08	.29		.37	.53
2580	Spray		2040	.004		.07	.16		.23	.31
2800	Primer plus one finish coat, smooth brush		525	.015		.29	.60		.89	1.23
2810	Roller		615	.013		.18	.51		.69	.97
2880	Spray		1200	.007		.16	.26		.42	.58
2900	Sand finish, brushwork		450	.018		.18	.70		.88	1.26
2910	Roller		515	.016		.18	.61		.79	1.12
2980	Spray		1025	.008		.16	.31		.47	.64
3200	Primer plus 2 finish coats, smooth, brush		355	.023		.26	.89		1.15	1.63
3210	Roller		415	.019		.26	.76		1.02	1.44
3280	Spray		800	.010		.23	.40		.63	.85
3300	Sand finish, brushwork		305	.026		.26	1.04		1.30	1.85
3310	Roller		350	.023		.26	.90		1.16	1.65
3380	Spray		675	.012		.23	.47		.70	.96
3600	Gloss coating, 3 coats, spray, clear		900	.009		.70	.35		1.05	1.30
3620	Multicolor		900	.009		1.13	.35		1.48	1.78
4000	Block filler, 1 coat, brushwork		425	.019		.12	.74		.86	1.25
4100	Silicone, water repellent, 2 coats, spray		2000	.004		.29	.16		.45	.56
4120	For oil base paint, odd					10%				
8200	For work 8' - 15' H, odd						10%			
8300	For work over 15' H, odd						20%			
8400	For light textured surfaces, odd						10%			
8410	Heavy textured, odd						25%			

09 91 23.74 Walls and Ceilings, Interior, Zero VOC Latex

09 91 23.74 WALLS AND CEILINGS, INTERIOR, ZERO VOC LATEX										
0100	Concrete, dry wall or plaster, latex, primer or sealer coat									
0200	Smooth finish, brushwork	G	1 Pord	1150	.007	S.F.	.06	.28	.34	.48
0240	Roller	G		1350	.006		.06	.23	.29	.42
0280	Spray	G		2750	.003		.05	.12	.17	.22
0300	Sand finish, brushwork	G		975	.008		.06	.32	.38	.56
0340	Roller	G		1150	.007		.07	.28	.35	.48
0380	Spray	G		2275	.004		.05	.14	.19	.27
0800	Point 2 coats, smooth finish, brushwork	G		680	.012		.14	.47	.61	.86
0840	Roller	G		800	.010		.15	.40	.55	.76
0880	Spray	G		1625	.005		.13	.19	.32	.43
0900	Sand finish, brushwork	G		605	.013		.14	.52	.66	.94
0940	Roller	G		1020	.008		.15	.31	.46	.63
0980	Spray	G		1700	.005		.13	.19	.32	.42
1200	Point 3 coats, smooth finish, brushwork	G	▼	510	.016	▼	.21	.62	.83	1.16

09 91 Painting

09 91 23 – Interior Painting

09 91 23.74 Walls and Ceilings, Interior, Zero VOC Latex				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
1240	Roller	G	1	Pord	650	.012	S.F.	.22	.49		.71	.97
1280	Spray	G			1625	.005		.19	.19		.38	.50
1800	For ceiling installations, add	G							25%			
8200	For work 8' - 15' H, add								10%			
8300	For work over 15' H, add								20%			

09 91 23.75 Dry Fall Painting

0010	DRY FALL PAINTING											
0100	Sprayed on walls, gypsum board or plaster											
0220	One coat											
0250	Two coats											
0280	Concrete or textured plaster, one coat											
0310	Two coats											
0340	Concrete block, one coat											
0370	Two coats											
0400	Wood, one coat											
0430	Two coats											
0440	On ceilings, gypsum board or plaster											
0470	One coat											
0500	Two coats											
0530	Concrete or textured plaster, one coat											
0560	Two coats											
0570	Structural steel, bar joists or metal deck, one coat											
0580	Two coats											

09 93 Staining and Transparent Finishing

09 93 23 – Interior Staining and Finishing

09 93 23.10 Varnish

0010	VARNISH											
0012	1 coat + sealer, on wood trim, brush, no sanding included											
0020	1 coat + sealer, on wood trim, brush, no sanding included, no VOC											
0100	Hardwood floors, 2 coats, no sanding included, roller											

09 96 High-Performance Coatings

09 96 23 – Graffiti-Resistant Coatings

09 96 23.10 Graffiti Resistant Treatments

0010	GRAFFITI RESISTANT TREATMENTS, sprayed on walls											
0100	Non-sacrificial, permanent non-stick coating, clear, on metals											
0200	Concrete											
0300	Concrete block											
0400	Brick											
0500	Stone											
0600	Unpointed wood											
2000	Semi-permanent cross linking polymer primer, on metals											
2100	Concrete											
2200	Concrete block											
2300	Brick											
2400	Stone											
2500	Unpointed wood											
3000	Top coat, on metals											

09 96 High-Performance Coatings

09 96 23 – Graffiti-Resistant Coatings

09 96 23.10 Graffiti Resistant Treatments		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3100	Concrete	1 Pard	2000	.004	S.F.	.62	.16		.78	.93
3200	Concrete block		2000	.004		.87	.16		1.03	1.20
3300	Brick		2000	.004		.73	.16		.89	1.04
3400	Stone		2000	.004		.73	.16		.89	1.04
3500	Unpointed wood		2000	.004		.87	.16		1.03	1.20
5000	Sacrificial, water based, on metal		2000	.004		.32	.16		.48	.60
5100	Concrete		2000	.004		.32	.16		.48	.60
5200	Concrete block		2000	.004		.32	.16		.48	.60
5300	Brick		2000	.004		.32	.16		.48	.60
5400	Stone		2000	.004		.32	.16		.48	.60
5500	Unpainted wood		2000	.004		.32	.16		.48	.60
8000	Cleaner for use after treatment									
8100	Towels or wipes, per package of 30				Eq.	.63			.63	.70
8200	Aersal spray, 24 oz. can				"	18			18	19.80

09 96 46 – Intumescent Coatings

09 96 46.10 Coatings, Intumescent

0010	COATINGS, INTUMESCENT, spray applied									
0100	On exterior structural steel, 0.25" d.f.t.	1 Pard	475	.017	S.F.	.41	.67		1.08	1.45
0150	0.51" d.f.t.		350	.023		.41	.90		1.31	1.81
0200	0.98" d.f.t.		280	.029		.41	1.13		1.54	2.15
0300	On interior structural steel, 0.108" d.f.t.		300	.027		.41	1.05		1.46	2.04
0350	0.310" d.f.t.		150	.053		.41	2.11		2.52	3.62
0400	0.670" d.f.t.		100	.080		.41	3.16		3.57	5.20

09 96 53 – Elastomeric Coatings

09 96 53.10 Coatings, Elastomeric

0010	COATINGS, ELASTOMERIC									
0020	High build, water proof, one coat system									
0100	Concrete, brush	1 Pard	650	.012	S.F.	.31	.49		.80	1.07
0110	Roll		1650	.005		.31	.19		.50	.63
0120	Spray		2600	.003		.31	.12		.43	.52
0200	Concrete block, brush		600	.013		.36	.53		.89	1.19
0210	Roll		1400	.006		.36	.23		.59	.74
0220	Spray		1900	.004		.36	.17		.53	.65
0300	Stucca, brush		400	.020		.50	.79		1.29	1.74
0310	Roll		1000	.008		.50	.32		.82	1.03
0320	Spray		1500	.005		.50	.21		.71	.87

09 96 56 – Epoxy Coatings

09 96 56.20 Wall Coatings

0010	WALL COATINGS									
0100	Acrylic glazed coatings, minimum	1 Pard	525	.015	S.F.	.31	.60		.91	1.25
0200	Maximum		305	.026		.65	1.04		1.69	2.28
0300	Epoxy coatings, minimum		525	.015		.40	.60		1	1.35
0400	Maximum		170	.047		1.20	1.86		3.06	4.12
0600	Exposed aggregate, troweled on, 1/16" to 1/4", minimum		235	.034		.61	1.35		1.96	2.70
0700	Maximum (epoxy or polyacrylate)		130	.062		1.31	2.43		3.74	5.10
0900	1/2" to 5/8" aggregate, minimum		130	.062		1.19	2.43		3.62	4.97
1000	Maximum		80	.100		2.06	3.96		6.02	8.20
1500	Exposed aggregate, sprayed on, 1/8" aggregate, minimum		295	.027		.56	1.07		1.63	2.23
1600	Maximum		145	.055		1.04	2.18		3.22	4.42
1800	High build epoxy, 50 mil, minimum		390	.021		.67	.81		1.48	1.96
1900	Maximum		95	.084		1.14	3.33		4.47	6.25

09 96 High-Performance Coatings

09 96 56 – Epoxy Coatings

09 96 56.20 Wall Coatings

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
2100	Laminated epoxy with fiberglass, minimum	1 Pstd	295	.027	S.F.	.72	1.07		1.79	2.40
2200	Maximum		145	.055		1.30	2.18		3.48	4.71
2400	Sprayed perlite or vermiculite, 1/16" thick, minimum		2935	.003		.27	.11		.38	.46
2500	Maximum		640	.013		.73	.49		1.22	1.54
2700	Vinyl plastic wall coating, minimum		735	.011		.33	.43		.76	1.01
2800	Maximum		240	.033		.81	1.32		2.13	2.87
3000	Urethane on smooth surface, 2 coats, minimum		1135	.007		.27	.28		.55	.72
3100	Maximum		665	.012		.58	.48		1.06	1.36
3600	Ceramic-like glazed coating, cementitious, minimum		440	.018		.47	.72		1.19	1.60
3700	Maximum		345	.023		.80	.92		1.72	2.26
3900	Resin base, minimum		640	.013		.33	.49		.82	1.10
4000	Maximum		330	.024		.53	.96		1.49	2.02

09 97 Special Coatings

09 97 13 – Steel Coatings

09 97 13.23 Exterior Steel Coatings

0010	EXTERIOR STEEL COATINGS	R050516-30								
6100	Cold galvanizing, brush in field	1 Psst	1100	.007	S.F.	.12	.29		.41	.67
6510	Paints & protective coatings, sprayed in field									
6520	Alkyds, primer	2 Psst	3600	.004	S.F.	.08	.18		.26	.41
6540	Gloss topcoats		3200	.005		.08	.20		.28	.46
6560	Silicone alkyd		3200	.005		.15	.20		.35	.53
6610	Epoxy, primer		3000	.005		.29	.22		.51	.71
6630	Intermediate or topcoat		2800	.006		.26	.23		.49	.71
6650	Enamel coat		2800	.006		.33	.23		.56	.78
6700	Epoxy ester, primer		2800	.006		.40	.23		.63	.86
6720	Topcoats		2800	.006		.22	.23		.45	.66
6810	Latex primer		3600	.004		.06	.18		.24	.39
6830	Topcoats		3200	.005		.06	.20		.26	.44
6910	Universal primers, one part, phenolic, modified alkyd		2000	.008		.40	.32		.72	1.02
6940	Two part, epoxy spray		2000	.008		.30	.32		.62	.91
7000	Zinc rich primers, self cure, spray, inorganic		1800	.009		.86	.36		1.22	1.60
7010	Epoxy, spray, organic		1800	.009		.26	.36		.62	.94
7020	Above one story, spray painting simple structures, add						25%			
7030	Intricate structures, add						50%			

Estimating Tips

General

- The items in this division are usually priced per square foot or each.
- Many items in Division 10 require some type of support system or special anchors that are not usually furnished with the item. The required anchors must be added to the estimate in the appropriate division.
- Some items in Division 10, such as lockers, may require assembly before installation. Verify the amount of assembly required. Assembly can often exceed installation time.

10 20 00 Interior Specialties

- Support angles and blocking are not included in the installation of toilet compartments, shower/dressing compartments, or cubicles. Appropriate line items from Divisions 5 or 6 may need to be added to support the installations.
- Toilet partitions are priced by the stall. A stall consists of a side wall, pilaster, and door with hardware. Toilet tissue holders and grab bars are extra.
- The required acoustical rating of a folding partition can have a significant impact on costs. Verify the sound transmission coefficient rating of the panel priced to the specification requirements.

- Grab bar installation does not include supplemental blocking or backing to support the required load. When grab bars are installed at an existing facility, provisions must be made to attach the grab bars to solid structure.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

10 05 Common Work Results for Specialties

10 05 05 – Selective Specialties Demolition

10 05 05.10 Selective Demolition, Specialties		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SELECTIVE DEMOLITION, SPECIALTIES									
1100	Boards and panels, wall mounted	2 Clab	15	1.067	Ea.		39		39	60.50
1200	Cases, for directory and/or bulletin boards, including doors		24	.667			24.50		24.50	37.50
1850	Shower partitions, cabinet or stall, including base and door		8	2			73.50		73.50	113
1855	Shower receptor, terrazzo or concrete	1 Clab	14	.571	▼		21		21	32.50
1900	Curtain track or rod, hospital type, ceiling mounted or suspended	"	220	.036	L.F.		1.33		1.33	2.06
1910	Toilet cubicles, remove	2 Clab	8	2	Ea.		73.50		73.50	113
1930	Urinal screen, remove	1 Clab	12	.667	"		24.50		24.50	37.50
2650	Wall guard, misc. wall or corner protection	"	320	.025	L.F.		.92		.92	1.41
2750	Access floor, metal panel system, including pedestals, covering	2 Clab	850	.019	S.F.		.69		.69	1.06
3050	Fireplace, prefab, freestanding or wall hung, including hood and screen	1 Clab	2	4	Ea.		147		147	226
3054	Chimney top, simulated brick, 4' high	"	15	.533			19.55		19.55	30
3200	Stove, woodburning, cast iron	2 Clab	2	8			293		293	450
3440	Weather vane, residential	1 Clab	12	.667			24.50		24.50	37.50
3500	Flagpole, groundset, to 70' high, excluding base/foundation	K-1	1	16			660	335	995	1,375
3555	To 30' high	"	2.50	6.400			264	133	397	550
4300	Letter, signs or plaques, exterior on wall	1 Clab	20	.400			14.65		14.65	22.50
4310	Signs, street, reflective aluminum, including post and bracket		60	.133			4.89		4.89	7.55
4320	Door signs interior on door 6" x 6", selective demolition	▼	20	.400			14.65		14.65	22.50
4550	Turnstiles, manual or electric	2 Clab	2	8			293		293	450
5050	Lockers	1 Clab	15	.533	Opng.		19.55		19.55	30
5250	Cabinets, recessed	Q-12	12	1.333	Ea.		66.50		66.50	100
5260	Mail boxes, Horiz., Key Lock, front loading, Remove	1 Carp	34	.235	"		10.80		10.80	16.65
5350	Awning, fabric, including frame	2 Clab	100	.160	S.F.		5.85		5.85	9.05
6050	Partition, woven wire		1400	.011			.42		.42	.65
6100	Folding gate, security, door or window		500	.032			1.17		1.17	1.81
6580	Acoustic air wall		650	.025	▼		.90		.90	1.39
7550	Telephone enclosure, exterior, post mounted		3	5.333	Ea.		195		195	300
8850	Scale, platform, excludes foundation or pit	▼	.25	64	"		2,350		2,350	3,625

10 11 Visual Display Units

10 11 13 – Chalkboards

10 11 13.13 Fixed Chalkboards

0010	FIXED CHALKBOARDS Parcelain enamel steel									
3900	Wall hung									
4000	Aluminum frame and chalktrough									
4200	3' x 4'	2 Carp	16	1	Ea.	240	46		286	335
4300	3' x 5'		15	1.067		310	49		359	415
4500	4' x 8'		14	1.143		425	52.50		477.50	545
4600	4' x 12'	▼	13	1.231	▼	585	56.50		641.50	730
4700	Wood frame and chalktrough									
4800	3' x 4'	2 Carp	16	1	Ea.	217	46		263	310
5000	3' x 5'		15	1.067		267	49		316	370
5100	4' x 5'		14	1.143		275	52.50		327.50	380
5300	4' x 8'	▼	13	1.231	▼	355	56.50		411.50	475
5400	Liquid chalk, white parcelain enamel, wall hung									
5420	Deluxe units, aluminum trim and chalktrough									
5450	4' x 4'	2 Carp	16	1	Ea.	252	46		298	350
5500	4' x 8'		14	1.143		380	52.50		432.50	500
5550	4' x 12'	▼	12	1.333	▼	535	61		596	685
5700	Wood trim and chalktrough									

10 11 Visual Display Units

10 11 13 – Chalkboards

10 11 13.13 Fixed Chalkboards		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5900	4' x 4'	2 Corp	16	1	Ea.	715	46		761	855
6000	4' x 6'		15	1.067		810	49		859	965
6200	4' x 8'	↓	14	1.143		970	52.50		1,022.50	1,150
6300	Liquid chalk, felt tip markers					2.04			2.04	2.24
6500	Erasers					1.81			1.81	1.99
6600	Board cleaner, 8 oz. bottle				↓	6			6	6.60

10 11 13.23 Modular-Support-Mounted Chalkboards

0010	MODULAR-SUPPORT-MOUNTED CHALKBOARDS									
0400	Sliding chalkboards									
0450	Vertical, one sliding board with back panel, wall mounted									
0500	8' x 4'	2 Corp	8	2	Ea.	2,225	91.50		2,316.50	2,600
0520	8' x 8'		7.50	2.133		3,225	98		3,323	3,700
0540	8' x 12'	↓	7	2.286	↓	4,175	105		4,280	4,750
0600	Two sliding boards, with back panel									
0620	8' x 4'	2 Corp	8	2	Ea.	3,500	91.50		3,591.50	4,000
0640	8' x 8'		7.50	2.133		5,025	98		5,123	5,700
0660	8' x 12'	↓	7	2.286	↓	8,400	105		8,505	9,400
0700	Horizontal, two track									
0800	4' x 8', 2 sliding panels	2 Corp	8	2	Ea.	1,950	91.50		2,041.50	2,300
0820	4' x 12', 2 sliding panels		7.50	2.133		2,550	98		2,648	2,950
0840	4' x 16', 4 sliding panels	↓	7	2.286	↓	3,425	105		3,530	3,925
0900	Four track, four sliding panels									
0920	4' x 8'	2 Corp	8	2	Ea.	3,150	91.50		3,241.50	3,600
0940	4' x 12'		7.50	2.133		4,100	98		4,198	4,675
0960	4' x 16'	↓	7	2.286	↓	5,350	105		5,455	6,025
1200	Vertical, motor operated									
1400	One sliding panel with back panel									
1450	10' x 4'	2 Corp	4	4	Ea.	5,650	183		5,833	6,500
1500	10' x 10'		3.75	4.267		6,825	196		7,021	7,800
1550	10' x 16'	↓	3.50	4.571	↓	8,050	210		8,260	9,175
1700	Two sliding panels with back panel									
1750	10' x 4'	2 Corp	4	4	Ea.	10,000	183		10,183	11,300
1800	10' x 10'		3.75	4.267		11,700	196		11,896	13,100
1850	10' x 16'	↓	3.50	4.571	↓	13,300	210		13,510	15,000
2000	Three sliding panels with back panel									
2100	10' x 4'	2 Corp	4	4	Ea.	14,000	183		14,183	15,700
2150	10' x 10'		3.75	4.267		15,300	196		15,496	17,200
2200	10' x 16'	↓	3.50	4.571	↓	18,500	210		18,710	20,700
2400	For projection screen, glass beaded, add				S.F.	8.10			8.10	8.90
2500	For remote control, 1 panel control, add				Ea.	380			380	420
2600	2 panel control, add				"	655			655	725
2800	For units without back panels, deduct				S.F.	5.10			5.10	5.65
2850	For liquid chalk porcelain panels, add				"	5.50			5.50	6.05
3000	Swing leaf, any comb. of chalkboard & cork, aluminum frame									
3100	Floor style, 6 panels									
3150	30" x 40" panels				Ea.	1,575			1,575	1,750
3200	48" x 40" panels				"	2,650			2,650	2,925
3300	Wall mounted, 6 panels									
3400	30" x 40" panels	2 Corp	16	1	Ea.	1,500	46		1,546	1,725
3450	48" x 40" panels	"	16	1	"	1,850	46		1,896	2,100
3600	Extra panels for swing leaf units									
3700	30" x 40" panels				Ea.	299			299	330

10 11 Visual Display Units

10 11 13 – Chalkboards

10 11 13.23 Modular-Support-Mounted Chalkboards				Daily Crew Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
						Ea.		Labor	Equipment		
3750	48" x 40" panels						370			370	405

10 11 13.43 Portable Chalkboards

0010	PORTABLE CHALKBOARDS										
0100	Freestanding, reversible										
0120	Economy, wood frame, 4' x 6'										
0140	Chalkboard both sides					Ea.	615			615	680
0160	Chalkboard one side, cork other side					"	565			565	620
0200	Standard, lightweight satin finished aluminum, 4' x 6'										
0220	Chalkboard both sides					Ea.	675			675	745
0240	Chalkboard one side, cork other side					"	705			705	775
0300	Deluxe, heavy duty extruded aluminum, 4' x 6'										
0320	Chalkboard both sides					Ea.	1,050			1,050	1,150
0340	Chalkboard one side, cork other side					"	1,025			1,025	1,125

10 11 16 – Markerboards

10 11 16.53 Electronic Markerboards

0010	ELECTRONIC MARKERBOARDS										
0100	Wall hung or free standing, 3' x 4' to 4' x 6'			2 Corp	8	2	S.F.	84	91.50	175.50	234
0150	5' x 6' to 4' x 8'				8	2	"	63	91.50	154.50	211
0500	Interactive projection module for existing whiteboards				8	2	Ea.	1,300	91.50	1,391.50	1,575

10 11 23 – Tackboards

10 11 23.10 Fixed Tackboards

0010	FIXED TACKBOARDS										
0020	Cork sheets, unbacked, no frame, 1/4" thick			2 Corp	290	.055	S.F.	2.07	2.53	4.60	6.20
0100	1/2" thick				290	.055		4.14	2.53	6.67	8.45
0300	Fabric-face, no frame, on 7/32" cork underlay				290	.055		6.30	2.53	8.83	10.85
0400	On 1/4" cork on 1/4" hardboard				290	.055		8.30	2.53	10.83	13.05
0600	With edges wrapped				290	.055		10.60	2.53	13.13	15.60
0700	On 7/16" fire retardant core				290	.055		6.50	2.53	9.03	11.05
0900	With edges wrapped				290	.055		8.05	2.53	10.58	12.75
1000	Designer fabric only, cut to size							2.70		2.70	2.97
1200	1/4" vinyl cork, on 1/4" hardboard, no frame			2 Corp	290	.055		8.75	2.53	11.28	13.50
1300	On 1/4" coreboard				290	.055		5.30	2.53	7.83	9.75
2000	For map and display rail, economy, odd				385	.042	L.F.	3.06	1.91	4.97	6.30
2100	Deluxe, odd				350	.046	"	4.70	2.10	6.80	8.40
2120	Prefabricated, 1/4" cork, 3' x 5' with aluminum frame				16	1	Ea.	124	46	170	207
2140	Wood frame				16	1		156	46	202	242
2160	4' x 4' with aluminum frame				16	1		134	46	180	218
2180	Wood frame				16	1		180	46	226	269
2200	4' x 8' with aluminum frame				14	1.143		270	52.50	322.50	380
2210	With wood frame				14	1.143		235	52.50	287.50	340
2220	4' x 12' with aluminum frame				12	1.333		400	61	461	535
2230	Bulletin board case, single glass door, with lock										
2240	36" x 24", economy			2 Corp	12	1.333	Ea.	310	61	371	435
2250	Deluxe				12	1.333		405	61	466	540
2260	42" x 30", economy				12	1.333		365	61	426	495
2270	Deluxe				12	1.333		525	61	586	675
2300	Glass enclosed cabinets, alum., cork panel, hinged doors										
2400	3' x 3', 1 door			2 Corp	12	1.333	Ea.	605	61	666	760
2500	4' x 4', 2 door				11	1.455		1,000	66.50	1,066.50	1,200
2600	4' x 7', 3 door				10	1.600		1,775	73.50	1,848.50	2,075
2800	4' x 10', 4 door				8	2		2,350	91.50	2,441.50	2,750

10 11 Visual Display Units

10 11 23 – Tackboards

10 11 23.10 Fixed Tackboards		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labar	Equipment		
2900	For lights, odd per door opening	1 Elec	13	.615	Eo.	161	33		194	227
3100	Horizontal sliding units, 4 doors, 4' x 8', 8' x 4'	2 Corp	9	1.778		1,950	81.50		2,031.50	2,275
3200	4' x 12'		7	2.286		2,550	105		2,655	2,950
3400	8 doors, 4' x 16'		5	3.200		3,450	147		3,597	4,000
3500	4' x 24'		4	4		4,650	183		4,833	5,375

10 11 23.20 Control Boards

0010	CONTROL BOARDS									
0020	Mognetic, porcelain finish, 18" x 24", fromed	2 Corp	8	2	Eo.	199	91.50		290.50	360
0100	24" x 36"		7.50	2.133		295	98		393	475
0200	36" x 48"		7	2.286		390	105		495	590
0300	48" x 72"		6	2.667		860	122		982	1,125
0400	48" x 96"	▼	5	3.200	▼	1,075	147		1,222	1,400

10 13 Directories

10 13 10 – Building Directories

10 13 10.10 Directory Boards

0010	DIRECTORY BOARDS									
0050	Plastic, gloss covered, 30" x 20"	2 Corp	3	5.333	Eo.	234	245		479	630
0100	36" x 48"		2	8		845	365		1,210	1,500
0300	Grooved cork, 30" x 20"		3	5.333		405	245		650	820
0400	36" x 48"		2	8		555	365		920	1,175
0600	Block felt, 30" x 20"		3	5.333		231	245		476	630
0700	36" x 48"		2	8		445	365		810	1,050
0900	Outdoor, weatherproof, block plastic, 36" x 24"		2	8		760	365		1,125	1,400
1000	36" x 36"		1.50	10.667		880	490		1,370	1,725
1800	Indoor, economy, open face, 18" x 24"		7	2.286		157	105		262	335
1900	24" x 36"		7	2.286		154	105		259	330
2000	36" x 24"		6	2.667		154	122		276	360
2100	36" x 48"		6	2.667		251	122		373	465
2400	Building directory, olum., block felt panels, 1 door, 24" x 18"		4	4		315	183		498	630
2500	36" x 24"		3.50	4.571		370	210		580	735
2600	48" x 32"		3	5.333		610	245		855	1,050
2700	2 door, 36" x 48"		2.50	6.400		655	293		948	1,175
2800	36" x 60"		2	8		860	365		1,225	1,500
2900	48" x 60"		1	16		970	735		1,705	2,200
3100	For bronze enamel finish, odd					15%				
3200	For bronze onodized finish, odd					25%				
3400	For illuminated directory, single door unit, odd				▼	135			135	148
3500	For 6" header panel, 6 letters per foot, odd				L.F.	21.50			21.50	23.50
6050	Building directory, electronic display, olum. frame, wall mounted	2 Corp	32	.500	S.F.	2,275	23		2,298	2,525
6100	Free standing	"	60	.267	"	2,800	12.25		2,812.25	3,100

10 14 Signage

10 14 19 – Dimensional Letter Signage

10 14 19.10 Exterior Signs		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	EXTERIOR SIGNS									
0020	Letters, 2" high, 3/8" deep, cast bronze	1 Corp	24	.333	Ea.	25.50	15.30		40.80	51.50
0140	1/2" deep, cast aluminum		18	.444		25.50	20.50		46	59.50
0160	Cast bronze		32	.250		31	11.45		42.45	52
0300	6" high, 5/8" deep, cast aluminum		24	.333		29	15.30		44.30	55.50
0400	Cast bronze		24	.333		59	15.30		74.30	88.50
0600	8" high, 3/4" deep, cast aluminum		14	.571		37	26		63	81.50
0700	Cast bronze		20	.400		82.50	18.35		100.85	120
0900	10" high, 1" deep, cast aluminum		18	.444		48	20.50		68.50	84.50
1000	Bronze		18	.444		114	20.50		134.50	157
1200	12" high, 1-1/4" deep, cast aluminum		12	.667		55	30.50		85.50	107
1500	Cast bronze		18	.444		136	20.50		156.50	182
1600	14" high, 2-5/16" deep, cast aluminum		12	.667		82	30.50		112.50	137
1800	Fabricated stainless steel, 6" high, 2" deep		20	.400		41.50	18.35		59.85	74
1900	12" high, 3" deep		18	.444		67	20.50		87.50	106
2100	18" high, 3" deep		12	.667		109	30.50		139.50	166
2200	24" high, 4" deep		10	.800		212	36.50		248.50	290
2700	Acrylic, on high density foam, 12" high, 2" deep		20	.400		16.90	18.35		35.25	47
2800	18" high, 2" deep	▼	18	.444		39	20.50		59.50	74.50
3900	Plaques, custom, 20" x 30", for up to 450 letters, cast aluminum	2 Corp	4	4		1,425	183		1,608	1,825
4000	Cast bronze		4	4		1,875	183		2,058	2,325
4200	30" x 36", up to 900 letters cast aluminum		3	5.333		2,350	245		2,595	2,950
4300	Cast bronze		3	5.333		4,225	245		4,470	5,025
4500	36" x 48", for up to 1300 letters, cast bronze		2	8		4,600	365		4,965	5,650
4800	Signs, reflective alum. directional signs, dbl. face, 2-way, w/bracket		30	.533		144	24.50		168.50	196
4900	4-way	▼	30	.533		231	24.50		255.50	292
5100	Exit signs, 24 ga. alum., 14" x 12" surface mounted	1 Corp	30	.267		47.50	12.25		59.75	71.50
5200	10" x 7"		20	.400		25.50	18.35		43.85	56.50
5400	Bracket mounted, double face, 12" x 10"	▼	30	.267		56	12.25		68.25	81
5500	Sticky back, stock decals, 14" x 10"	1 Clab	50	.160		27	5.85		32.85	38.50
6000	Interior elec., wall mount, fibergloss panels, 2 lamps, 6"	1 Elec	8	1		87	53.50		140.50	176
6100	8"	"	8	1		103	53.50		156.50	194
6400	Replacement sign faces, 6" or 8"	1 Clab	50	.160		62.50	5.85		68.35	77.50

10 14 23 – Panel Signage

10 14 23.13 Engraved Panel Signage

0010	ENGRAVED PANEL SIGNAGE, interior									
1010	Flexible door sign, adhesive back, w/Braille, 5/8" letters, 4" x 4"	1 Clab	32	.250	Ea.	30.50	9.15		39.65	47.50
1050	6" x 6"		32	.250		46.50	9.15		55.65	65
1100	8" x 2"		32	.250		30.50	9.15		39.65	47.50
1150	8" x 4"		32	.250		39.50	9.15		48.65	57.50
1200	8" x 8"		32	.250		52.50	9.15		61.65	72
1250	12" x 2"		32	.250		35	9.15		44.15	52.50
1300	12" x 6"		32	.250		50	9.15		59.15	69
1350	12" x 12"		32	.250		105	9.15		114.15	130
1500	Graphic symbols, 2" x 2"		32	.250		12	9.15		21.15	27.50
1550	6" x 6"		32	.250		31	9.15		40.15	48
1600	8" x 8"	▼	32	.250		39	9.15		48.15	56.50
2010	Corridor, stock acrylic, 2-sided, with mounting bracket, 2" x 8"	1 Corp	24	.333		24.50	15.30		39.80	50.50
2020	2" x 10"		24	.333		33.50	15.30		48.80	60.50
2050	3" x 8"		24	.333		28.50	15.30		43.80	55
2060	3" x 10"		24	.333		42	15.30		57.30	70
2070	3" x 12"		24	.333		47	15.30		62.30	75

10 14 Signage

10 14 23 – Panel Signage

10 14 23.13 Engraved Panel Signage		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2100	4" x 8"	1 Carp	24	.333	Ea.	21	15.30		36.30	46.50
2110	4" x 10"		24	.333		37	15.30		52.30	64
2120	4" x 12"		24	.333		50.50	15.30		65.80	79

10 14 53 – Traffic Signage

10 14 53.20 Traffic Signs

0010	TRAFFIC SIGNS									
0012	Stack, 24" x 24", no posts, .080" alum. reflectorized	B-80	70	.457	Ea.	83	18.15	10.85	112	131
0100	High intensity		70	.457		95.50	18.15	10.85	124.50	145
0300	30" x 30", reflectorized		70	.457		121	18.15	10.85	150	173
0400	High intensity		70	.457		133	18.15	10.85	162	186
0600	Guide and directional signs, 12" x 18", reflectarized		70	.457		34.50	18.15	10.85	63.50	78
0700	High intensity		70	.457		51	18.15	10.85	80	96.50
0900	18" x 24", stack signs, reflectorized		70	.457		46	18.15	10.85	75	91
1000	High intensity		70	.457		51	18.15	10.85	80	96.50
1200	24" x 24", stock signs, reflectarized		70	.457		56	18.15	10.85	85	101
1300	High intensity		70	.457		61	18.15	10.85	90	107
1500	Add to above for steel posts, galvanized, 10'-0" upright, bolted		200	.160		32.50	6.35	3.79	42.64	50
1600	12'-0" upright, bolted		140	.229		39	9.10	5.40	53.50	63
1800	Highway road signs, aluminum, over 20 S.F., reflectarized		350	.091	S.F.	33.50	3.63	2.17	39.30	45
2000	High intensity		350	.091		33.50	3.63	2.17	39.30	45
2200	Highway, suspended over road, 80 S.F. min., reflectorized		165	.194		31	7.70	4.59	43.29	51
2300	High intensity		165	.194		29.50	7.70	4.59	41.79	49.50

10 17 Telephone Specialties

10 17 16 – Telephone Enclosures

10 17 16.10 Commercial Telephone Enclosures

0010	COMMERCIAL TELEPHONE ENCLOSURES									
0300	Shelf type, wall hung, minimum	2 Corp	5	3.200	Eo.	1,025	147		1,172	1,350
0400	Maximum	"	5	3.200	"	2,850	147		2,997	3,350

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.13 Metal Toilet Compartments

0010	METAL TOILET COMPARTMENTS									
0110	Cubicles, ceiling hung									
0200	Powder coated steel	2 Corp	4	4	Ea.	515	183		698	850
0500	Stainless steel	"	4	4		1,075	183		1,258	1,450
0600	For handicap units, incl. 52" grab bars, odd					430			430	475
0900	Floor and ceiling anchored									
1000	Powder coated steel	2 Corp	5	3.200	Ea.	590	147		737	870
1300	Stainless steel	"	5	3.200		1,150	147		1,297	1,500
1400	For handicap units, incl. 52" grab bars, odd					296			296	325
1610	Floor anchored									
1700	Powder coated steel	2 Corp	7	2.286	Eo.	585	105		690	800
2000	Stainless steel	"	7	2.286		1,400	105		1,505	1,700
2100	For handicap units, incl. 52" grab bars, add					310			310	345
2200	For juvenile units, deduct					41.50			41.50	45.50
2450	Floor anchored, headrail broced									
2500	Powder coated steel	2 Corp	6	2.667	Ea.	380	122		502	605

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.13 Metal Toilet Compartments			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
2804	Stainless steel		2 Corp	4.60	3.478	Ea.	1,050	159		1,209	1,400
2900	For handicap units, incl. 52" grab bars, add	♿					370			370	410
3000	Wall hung partitions, powder coated steel		2 Corp	7	2.286		635	105		740	860
3300	Stainless steel		"	7	2.286		1,650	105		1,755	1,975
3400	For handicap units, incl. 52" grab bars, add	♿					370			370	410
4000	Screens, entrance, floor mounted, 58" high, 48" wide										
4200	Powder coated steel		2 Corp	15	1.067	Ea.	242	49		291	340
4500	Stainless steel		"	15	1.067	"	910	49		959	1,075
4650	Urinal screen, 18" wide										
4704	Powder coated steel		2 Corp	6.15	2.602	Ea.	206	119		325	410
5004	Stainless steel		"	6.15	2.602	"	580	119		699	825
5100	Floor mounted, head rail braced										
5300	Powder coated steel		2 Corp	8	2	Ea.	230	91.50		321.50	395
5600	Stainless steel		"	8	2	"	595	91.50		686.50	795
5750	Pilaster, flush										
5800	Powder coated steel		2 Corp	10	1.600	Ea.	278	73.50		351.50	420
6100	Stainless steel			10	1.600		615	73.50		688.50	790
6300	Past braced, powder coated steel			10	1.600		153	73.50		226.50	281
6600	Stainless steel			10	1.600		450	73.50		523.50	610
6700	Wall hung, bracket supported										
6800	Powder coated steel		2 Corp	10	1.600	Ea.	153	73.50		226.50	281
7100	Stainless steel			10	1.600		227	73.50		300.50	365
7400	Flange supported, powder coated steel			10	1.600		106	73.50		179.50	229
7700	Stainless steel			10	1.600		310	73.50		383.50	455
7800	Wedge type, powder coated steel			10	1.600		134	73.50		207.50	261
8100	Stainless steel			10	1.600		575	73.50		648.50	750

10 21 13.14 Metal Toilet Compartment Components

10 21 13.14 METAL TOILET COMPARTMENT COMPONENTS											
0010	METAL TOILET COMPARTMENT COMPONENTS										
0100	Pilasters										
0110	Overhead braced, powder coated steel, 7" wide x 82" high		2 Corp	22.20	.721	Ea.	69.50	33		102.50	128
0120	Stainless steel			22.20	.721		124	33		157	188
0130	Floor braced, powder coated steel, 7" wide x 70" high			23.30	.687		123	31.50		154.50	185
0140	Stainless steel			23.30	.687		242	31.50		273.50	315
0150	Ceiling hung, powder coated steel, 7" wide x 83" high			13.30	1.203		131	55		186	229
0160	Stainless steel			13.30	1.203		271	55		326	385
0170	Wall hung, powder coated steel, 3" wide x 58" high			18.90	.847		129	39		168	202
0180	Stainless steel			18.90	.847		191	39		230	270
0200	Panels										
0210	Powder coated steel, 31" wide x 58" high		2 Corp	18.90	.847	Ea.	132	39		171	205
0220	Stainless steel			18.90	.847		360	39		399	460
0230	Powder coated steel, 53" wide x 58" high			18.90	.847		164	39		203	240
0240	Stainless steel			18.90	.847		470	39		509	575
0250	Powder coated steel, 63" wide x 58" high			18.90	.847		200	39		239	280
0260	Stainless steel			18.90	.847		515	39		554	625
0300	Doors										
0310	Powder coated steel, 24" wide x 58" high		2 Corp	14.10	1.135	Ea.	138	52		190	232
0320	Stainless steel			14.10	1.135		287	52		339	395
0330	Powder coated steel, 26" wide x 58" high			14.10	1.135		140	52		192	235
0340	Stainless steel			14.10	1.135		296	52		348	405
0350	Powder coated steel, 28" wide x 58" high			14.10	1.135		160	52		212	257
0360	Stainless steel			14.10	1.135		330	52		382	445
0370	Powder coated steel, 36" wide x 58" high			14.10	1.135		172	52		224	271

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.14 Metal Toilet Compartment Components		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0380	Stainless steel	2 Carp	14.10	1.135	Ea.	370	52		422	490
0400	Headrails									
0410	For powder coated steel, 62" long	2 Carp	65	.246	Ea.	21.50	11.30		32.80	41
0420	Stainless steel		65	.246		22.50	11.30		33.80	42.50
0430	For powder coated steel, 84" long		50	.320		32	14.65		46.65	58
0440	Stainless steel		50	.320		34.50	14.65		49.15	60.50
0450	For powder coated steel, 120" long		30	.533		42.50	24.50		67	84.50
0460	Stainless steel		30	.533		46.50	24.50		71	88.50

10 21 13.16 Plastic-Laminate-Clad Toilet Compartments

0010	PLASTIC-LAMINATE-CLAD TOILET COMPARTMENTS									
0110	Cubicles, ceiling hung									
0300	Plastic laminate on particle board	2 Carp	4	4	Ea.	520	183		703	855
0600	For handicap units, incl. 52" grab bars, add				"	430			430	475
0900	Floor and ceiling anchored									
1100	Plastic laminate on particle board	2 Carp	5	3.200	Ea.	785	147		932	1,100
1400	For handicap units, incl. 52" grab bars, add				"	296			296	325
1610	Floor mounted									
1800	Plastic laminate on particle board	2 Carp	7	2.286	Ea.	490	105		595	700
2450	Floor mounted, headrail braced									
2600	Plastic laminate on particle board	2 Carp	6	2.667	Ea.	750	122		872	1,025
3400	For handicap units, incl. 52" grab bars, add				"	370			370	410
4300	Entrance screen, floor mtd., plas. lam., 58" high, 48" wide	2 Carp	15	1.067		610	49		659	745
4800	Urinal screen, 18" wide, ceiling braced, plastic laminate		8	2		184	91.50		275.50	345
5400	Floor mounted, headrail braced		8	2		190	91.50		281.50	350
5900	Pilaster, flush, plastic laminate		10	1.600		505	73.50		578.50	675
6400	Post braced, plastic laminate		10	1.600		300	73.50		373.50	445
6700	Wall hung, bracket supported									
6900	Plastic laminate on particle board	2 Carp	10	1.600	Ea.	92.50	73.50		166	215
7450	Flange supported									
7500	Plastic laminate on particle board	2 Carp	10	1.600	Ea.	230	73.50		303.50	365

10 21 13.17 Plastic-Laminate Clad Toilet Compartment Components

0010	PLASTIC-LAMINATE CLAD TOILET COMPARTMENT COMPONENTS									
0100	Pilasters									
0110	Overhead braced, 7" wide x 82" high	2 Carp	22.20	.721	Ea.	95	33		128	156
0130	Floor anchored, 7" wide x 70" high		23.30	.687		95	31.50		126.50	153
0150	Ceiling hung, 7" wide x 83" high		13.30	1.203		99.50	55		154.50	194
0180	Wall hung, 3" wide x 58" high		18.90	.847		93	39		132	162
0200	Panels									
0210	31" wide x 58" high	2 Carp	18.90	.847	Ea.	143	39		182	217
0230	51" wide x 58" high		18.90	.847		196	39		235	276
0250	63" wide x 58" high		18.90	.847		229	39		268	310
0300	Doors									
0310	24" wide x 58" high	2 Carp	14.10	1.135	Ea.	141	52		193	236
0330	26" wide x 58" high		14.10	1.135		146	52		198	241
0350	28" wide x 58" high		14.10	1.135		150	52		202	246
0370	36" wide x 58" high		14.10	1.135		180	52		232	279
0400	Headrails									
0410	62" long	2 Carp	65	.246	Ea.	22.50	11.30		33.80	42.50
0430	84" long		60	.267		31.50	12.25		43.75	53.50
0450	120" long		30	.533		42	24.50		66.50	83.50

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.19 Plastic Toilet Compartments				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	PLASTIC TOILET COMPARTMENTS											
0110	Cubicles, ceiling hung											
0250	Phenolic		2 Corp	4	4	Eo.	865	183			1,048	1,225
0600	For handicop units, incl. 52" grob bors, odd					"	430				430	475
0900	Floor ond ceiling anchored											
1050	Phenolic		2 Corp	5	3.200	Eo.	825	147			972	1,125
1400	For handicop units, incl. 52" grob bors, odd					"	296				296	325
1610	Floor mounted											
1750	Phenolic		2 Corp	7	2.286	Eo.	795	105			900	1,025
2100	For handicop units, incl. 52" grob bors, odd						310				310	345
2200	For juvenile units, deduct											
2450	Floor mounted, heodroil broced											
2550	Phenolic		2 Corp	6	2.667	Eo.	795	122			917	1,075

10 21 13.20 Plastic Toilet Compartment Components

0010	PLASTIC TOILET COMPARTMENT COMPONENTS											
0100	Pilosters											
0110	Overhead broced, polymer plostic, 7" wide x 82" high		2 Corp	22.20	.721	Eo.		121	33		154	184
0120	Phenolic			22.20	.721			148	33		181	214
0130	Floor broced, polymer plostic, 7" wide x 70" high			23.30	.687			169	31.50		200.50	235
0140	Phenolic			23.30	.687			140	31.50		171.50	203
0150	Ceiling hung, polymer plostic, 7" wide x 83" high			13.30	1.203			166	55		221	268
0160	Phenolic			13.30	1.203			158	55		213	259
0180	Woll hung, phenolic, 3" wide x 58" high			18.90	.847			96	39		135	165
0200	Ponels											
0203	Polymer plostic, 18" high x 55" high		2 Corp	18.90	.847	Eo.		200	39		239	280
0206	Phenolic, 18" wide x 58" high			18.90	.847			193	39		232	272
0210	Polymer plostic, 31" high x 55" high			18.90	.847			305	39		344	395
0220	Phenolic, 31" wide x 58" high			18.90	.847			260	39		299	345
0223	Polymer plostic, 48" high x 55" high			18.90	.847			470	39		509	575
0226	Phenolic, 48" wide x 58" high			18.90	.847			550	39		589	665
0230	Polymer plostic, 51" wide x 55" high			18.90	.847			405	39		444	505
0240	Phenolic, 51" wide x 58" high			18.90	.847			395	39		434	495
0250	Polymer plostic, 63" wide x 55" high			18.90	.847			555	39		594	670
0260	Phenolic, 63" wide x 58" high			18.90	.847			415	39		454	520
0300	Doors											
0310	Polymer plostic, 24" wide x 55" high		2 Corp	14.10	1.135	Eo.		208	52		260	310
0320	Phenolic, 24" wide x 58" high			14.10	1.135			292	52		344	400
0330	Polymer plostic, 26" high x 55" high			14.10	1.135			222	52		274	325
0340	Phenolic, 26" wide x 58" high			14.10	1.135			310	52		362	420
0350	Polymer plostic, 28" wide x 55" high			14.10	1.135			247	52		299	355
0360	Phenolic, 28" wide x 58" high			14.10	1.135			330	52		382	440
0370	Polymer plostic, 36" wide x 55" high			14.10	1.135			288	52		340	395
0380	Phenolic, 36" wide x 58" high		▼	14.10	1.135	▼		410	52		462	530
0400	Heodroils											
0410	For polymer plostic, 62" long		2 Corp	65	.246	Eo.		22.50	11.30		33.80	42.50
0420	Phenolic			65	.246			22.50	11.30		33.80	42.50
0430	For polymer plostic, 84" long			50	.320			33	14.65		47.65	58.50
0440	Phenolic			50	.320			33	14.65		47.65	58.50
0450	For polymer plostic, 120" long			30	.533			43	24.50		67.50	85
0460	Phenolic			30	.533			43	24.50		67.50	85

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.40 Stone Toilet Compartments			Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0010	STONE TOILET COMPARTMENTS										
0100	Cubicles, ceiling hung, marble		2 Morb	2	8	Eo.	1,625	340		1,965	2,300
0600	For handicop units, incl. 52" grab bars, odd	♿					430			430	475
0800	Floor & ceiling anchored, morble	♿	2 Morb	2.50	6.400		2,025	270		2,295	2,650
1400	For handicop units, incl. 52" grab bars, odd	♿					296			296	325
1600	Floor mounted, morble	♿	2 Morb	3	5.333		1,200	225		1,425	1,675
2400	Floor mounted, headrail broced, morble	♿	"	3	5.333		1,150	225		1,375	1,625
2900	For handicop units, incl. 52" grab bars, odd						370			370	410
4100	Entrance screen, floor mounted morble, 58" high, 48" wide		2 Morb	9	1.778		755	75		830	945
4600	Urinal screen, 18" wide, ceiling broced, morble		D-1	6	2.667		755	110		865	1,000
5100	Floor mounted, heod rail broced										
5200	Morble		D-1	6	2.667	Eo.	645	110		755	880
5700	Pilaster, flush, morble			9	1.778		840	73.50		913.50	1,025
6200	Post broced, morble		▼	9	1.778	▼	825	73.50		898.50	1,025

10 21 16 – Shower and Dressing Compartments

10 21 16.10 Partitions, Shower

0010	PARTITIONS, SHOWER floor mounted, no plumbing										
0400	Cobinet, one piece, fibergloss, 32" x 32"		2 Corp	5	3.200	Eo.	510	147		657	785
0420	36" x 36"			5	3.200		610	147		757	895
0440	36" x 48"			5	3.200		1,300	147		1,447	1,650
0460	Acrylic, 32" x 32"			5	3.200		299	147		446	555
0480	36" x 36"			5	3.200		1,000	147		1,147	1,325
0500	36" x 48"		▼	5	3.200		1,500	147		1,647	1,875
0520	Shower door for above, cleor plostic, 24" wide		1 Corp	8	1		177	46		223	266
0540	28" wide			8	1		201	46		247	293
0560	Tempered gloss, 24" wide			8	1		191	46		237	281
0580	28" wide			8	1		216	46		262	310
06400	Gloss stolls, with doors, no receptors, chrome on brass		2 Shee	3	5.333		1,650	292		1,942	2,275
06700	Anodized aluminum		"	4	4		1,150	219		1,369	1,600
06900	Morble shower stoll, stock design, with shower door		2 Morb	1.20	13.333		2,475	565		3,040	3,575
07000	With curtoin			1.30	12.308		2,200	520		2,720	3,200
08200	Receptors, precast terrozzo, 32" x 32"			14	1.143		330	48.50		378.50	440
08300	48" x 34"			9.50	1.684		440	71		511	595
08500	Plostic, simulated terrozzo receptor, 32" x 32"			14	1.143		148	48.50		196.50	237
08600	32" x 48"			12	1.333		215	56.50		271.50	325
08800	Precast concrete, colors, 32" x 32"			14	1.143		186	48.50		234.50	279
08900	48" x 48"		▼	8	2		251	84.50		335.50	405
09100	Shower doors, economy plostic, 24" wide		1 Shee	9	.889		144	48.50		192.50	233
09200	Tempered gloss door, economy			8	1		260	54.50		314.50	370
09400	Folding, tempered gloss, oluminum frome			6	1.333		390	73		463	540
09500	Sliding, tempered gloss, 48" opening			6	1.333		540	73		613	700
09700	Deluxe, tempered gloss, chrome on brass frome, minimum			8	1		385	54.50		439.50	505
09800	Moximum			1	8		625	440		1,065	1,350
09850	On onodized aluminum frome, minimum			2	4		540	219		759	925
09900	Moximum		▼	1	8	▼	625	440		1,065	1,350
105100	Shower enclosure, tempered gloss, onodized olum. frome										
105120	2 ponel & door, corner unit, 32" x 32"		1 Shee	2	4	Eo.	1,025	219		1,244	1,475
105140	Neo-angle corner unit, 16" x 24" x 16"		"	2	4		1,075	219		1,294	1,525
105200	Shower surround, 3 woll, polypropylene, 32" x 32"		1 Corp	4	2		455	91.50		546.50	640
105220	PVC, 32" x 32"			4	2		380	91.50		471.50	560
105240	Fibergloss			4	2		420	91.50		511.50	600
105250	2 woll, polypropylene, 32" x 32"			4	2	▼	315	91.50		406.50	490

10 21 Compartments and Cubicles

10 21 16 – Shower and Dressing Compartments

10 21 16.10 Partitions, Shower		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5270	PVC	1 Corp	4	2	Eo.	395	91.50		486.50	575
5290	Fiberglass	▼	4	2		400	91.50		491.50	580
5300	Tub doors, tempered glass & frame, minimum	1 Shee	8	1		229	54.50		283.50	335
5400	Maximum		6	1.333		535	73		608	700
5600	Chrome plated, brass frame, minimum		8	1		305	54.50		359.50	420
5700	Maximum		6	1.333		745	73		818	925
5900	Tub/shower enclosure, temp. glass, alum. frame, minimum		2	4		410	219		629	785
6200	Maximum		1.50	5.333		855	292		1,147	1,375
6500	On chrome-plated brass frame, minimum		2	4		565	219		784	960
6600	Maximum	▼	1.50	5.333		1,200	292		1,492	1,775
6800	Tub surround, 3 wall, polypropylene	1 Corp	4	2		256	91.50		347.50	425
6900	PVC		4	2		390	91.50		481.50	570
7000	Fiberglass, minimum		4	2		400	91.50		491.50	580
7100	Maximum		3	2.667		680	122		802	940

10 21 23 – Cubicle Curtains and Track

10 21 23.16 Cubicle Track and Hardware

0010	CUBICLE TRACK AND HARDWARE									
0020	Curtain track, box channel, ceiling mounted	1 Corp	135	.059	L.F.	6.20	2.72		8.92	11
0100	Suspended	"	100	.080	"	8.20	3.67		11.87	14.65
0300	Curtains, nylon mesh tops, fire resistant, 11 oz. per lineal yard									
0310	Polyester oxford cloth, 9' ceiling height	1 Corp	425	.019	L.F.	15.10	.86		15.96	17.95
0500	8' ceiling height		425	.019		9.45	.86		10.31	11.75
0700	Designer oxford cloth	▼	425	.019	▼	9.85	.86		10.71	12.15
0800	I.V. track systems									
0820	I.V. track, oval	1 Corp	135	.059	L.F.	5.35	2.72		8.07	10.10
0830	I.V. trolley		32	.250	Ea.	41	11.45		52.45	62.50
0840	I.V. pendent, (tree, 5 hook)	▼	32	.250	"	167	11.45		178.45	201

10 22 Partitions

10 22 13 – Wire Mesh Partitions

10 22 13.10 Partitions, Woven Wire

0010	PARTITIONS, WOVEN WIRE for tool or stockroom enclosures									
0100	Channel frame, 1-1/2" diamond mesh, 10 ga. wire, pointed									
0300	Wall panels, 4'-0" wide, 7' high	2 Corp	25	.640	Eo.	142	29.50		171.50	202
0400	8' high		23	.696		162	32		194	227
0600	10' high	▼	18	.889		191	41		232	273
0700	For 5' wide panels, odd					5%				
0900	Ceiling panels, 10' long, 2' wide	2 Corp	25	.640		148	29.50		177.50	209
1000	4' wide		15	1.067		171	49		220	264
1200	Panel with service window & shelf, 5' wide, 7' high		20	.800		355	36.50		391.50	445
1300	8' high		15	1.067		445	49		494	565
1500	Sliding doors, full height, 3' wide, 7' high		6	2.667		460	122		582	700
1600	10' high		5	3.200		525	147		672	805
1800	6' wide sliding door, 7' full height		5	3.200		635	147		782	925
1900	10' high		4	4		820	183		1,003	1,175
2100	Swinging doors, 3' wide, 7' high, no transom		6	2.667		292	122		414	510
2200	7' high, 3' transom	▼	5	3.200	▼	370	147		517	630

10 22 Partitions

10 22 16 – Folding Gates

10 22 16.10 Security Gates		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SECURITY GATES for roll up type, see Section 08 33 13.10									
0300	Scissors type folding gate, ptd. steel, single, 6-1/2' high, 5-1/2' wide	2 Sswk	4	4	Opng.	223	204		427	605
0350	6-1/2' wide		4	4		243	204		447	625
0400	7-1/2' wide		4	4		253	204		457	640
0600	Double gate, 8' high, 8' wide		2.50	6.400		380	325		705	990
0650	10' wide		2.50	6.400		415	325		740	1,025
0700	12' wide		2	8		610	410		1,020	1,400
0750	14' wide		2	8		700	410		1,110	1,500
0900	Door gate, folding steel, 4' wide, 61" high		4	4		138	204		342	510
1000	71" high		4	4		169	204		373	545
1200	81" high		4	4		182	204		386	560
1300	Window gates, 2' to 4' wide, 31" high		4	4		78	204		282	445
1500	55" high		3.75	4.267		122	218		340	520
1600	79" high		3.50	4.571		144	234		378	570

10 22 19 – Demountable Partitions

10 22 19.43 Demountable Composite Partitions

0010	DEMOUNTABLE COMPOSITE PARTITIONS , add for doors									
0100	Do not deduct door openings from total L.F.									
0900	Demountable gypsum system on 2" to 2-1/2"									
1000	steel studs, 9' high, 3" to 3-3/4" thick									
1200	Vinyl clad gypsum	2 Corp	48	.333	L.F.	59	15.30		74.30	88.50
1300	Fabric clad gypsum		44	.364		147	16.65		163.65	188
1500	Steel clad gypsum		40	.400		164	18.35		182.35	209
1600	1.75 system, aluminum framing, vinyl clad hardboard,									
1800	proper honeycomb core panel, 1-3/4" to 2-1/2" thick									
1900	9' high	2 Corp	48	.333	L.F.	99	15.30		114.30	133
2100	7' high		60	.267		89	12.25		101.25	116
2200	5' high		80	.200		75	9.15		84.15	96.50
2250	Unitized gypsum system									
2300	Unitized panel, 9' high, 2" to 2-1/2" thick									
2350	Vinyl clad gypsum	2 Corp	48	.333	L.F.	127	15.30		142.30	164
2400	Fabric clad gypsum	"	44	.364	"	210	16.65		226.65	257
2500	Unitized mineral fiber system									
2510	Unitized panel, 9' high, 2-1/4" thick, aluminum frame									
2550	Vinyl clad mineral fiber	2 Corp	48	.333	L.F.	127	15.30		142.30	163
2600	Fabric clad mineral fiber	"	44	.364	"	189	16.65		205.65	234
2800	Movable steel walls, modular system									
2900	Unitized panels, 9' high, 48" wide									
3100	Baked enamel, pre-finished	2 Corp	60	.267	L.F.	144	12.25		156.25	177
3200	Fabric clad steel		56	.286	"	207	13.10		220.10	248
5310	Trockless wall, cork finish, semi-acoustic, 1-5/8" thick, minimum		325	.049	S.F.	37.50	2.26		39.76	45
5320	Maximum		190	.084		42	3.86		45.86	52
5330	Acoustic, 2" thick, minimum		305	.052		35.50	2.41		37.91	43
5340	Maximum		225	.071		54.50	3.26		57.76	65
5500	For acoustical partitions, add, minimum					2.31			2.31	2.54
5550	Maximum					10.80			10.80	11.85
5700	For doors, see Sections 08 11 & 08 16									
5800	For door hardware, see Section 08 71									
6100	In-place modular office system, w/prehung hollow core door									
6200	3" thick polystyrene core panels									
6250	12' x 12', 2 wall	2 Clob	3.80	4.211	Ea.	4,125	154		4,279	4,775
6300	4 wall		1.90	8.421		7,300	310		7,610	8,500

10 22 Partitions

10 22 19 – Demountable Partitions

10 22 19.43 Demountable Composite Partitions		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6350	16' x 16', 2 wall	2 Clab	3.60	4.444	Ea.	6,175	163		6,338	7,050
6400	4 wall	▼	1.80	8.889	▼	8,650	325		8,975	10,000

10 22 23 – Portable Partitions, Screens, and Panels

10 22 23.13 Wall Screens

0010	WALL SCREENS, divider panels, free standing, fiber core									
0020	Fabric face straight									
0100	3'-0" lang, 4'-0" high	2 Carp	100	.160	L.F.	149	7.35		156.35	175
0200	5'-0" high		90	.178		105	8.15		113.15	129
0500	6'-0" high		75	.213		122	9.80		131.80	150
0900	5'-0" lang, 4'-0" high		175	.091		92	4.19		96.19	107
1000	5'-0" high		150	.107		100	4.89		104.89	118
1500	6'-0" high		125	.128		117	5.85		122.85	137
1600	6'-0" lang, 5'-0" high		162	.099		97	4.53		101.53	114
3200	Economical panels, fabric face, 4'-0" lang, 5'-0" high		132	.121		49	5.55		54.55	62.50
3250	6'-0" high		112	.143		53	6.55		59.55	68
3300	5'-0" lang, 5'-0" high		150	.107		51.50	4.89		56.39	64
3350	6'-0" high		125	.128		43	5.85		48.85	56.50
3450	Acaustical panels, 60 to 90 NRC, 3'-0" lang, 5'-0" high		90	.178		88.50	8.15		96.65	110
3550	6'-0" high		75	.213		98	9.80		107.80	123
3600	5'-0" lang, 5'-0" high		150	.107		65	4.89		69.89	79
3650	6'-0" high		125	.128		68	5.85		73.85	84
3700	6'-0" lang, 5'-0" high		162	.099		56	4.53		60.53	68.50
3750	6'-0" high		138	.116		55	5.30		60.30	68.50
3800	Economy acaustical panels, 40 N.R.C., 4'-0" lang, 5'-0" high		132	.121		49	5.55		54.55	62.50
3850	6'-0" high		112	.143		53	6.55		59.55	68
3900	5'-0" lang, 6'-0" high		125	.128		43	5.85		48.85	56.50
3950	6'-0" lang, 5'-0" high		162	.099		43	4.53		47.53	54.50
4000	Metal chalkboard, 6'-6" high, chalkboard, 1 side		125	.128		119	5.85		124.85	140
4100	Metal chalkboard, 2 sides		120	.133		136	6.10		142.10	158
4300	Tackboard, both sides		123	.130		107	5.95		112.95	127

10 22 33 – Accordion Folding Partitions

10 22 33.10 Partitions, Accordion Folding

0010	PARTITIONS, ACCORDION FOLDING									
0100	Vinyl covered, aver 150 S.F., frame not included									
0300	Residential, 1.25 lb. per S.F., 8' maximum height	2 Carp	300	.053	S.F.	23	2.45		25.45	29
0400	Commercial, 1.75 lb. per S.F., 8' maximum height		225	.071		26	3.26		29.26	33.50
0600	2 lb. per S.F., 17' maximum height		150	.107		27	4.89		31.89	37
0700	Industrial, 4 lb. per S.F., 20' maximum height		75	.213		40.50	9.80		50.30	59.50
0900	Acaustical, 3 lb. per S.F., 17' maximum height		100	.160		29	7.35		36.35	43
1200	5 lb. per S.F., 20' maximum height		95	.168		40	7.70		47.70	56
1300	5.5 lb. per S.F., 17' maximum height		90	.178		47	8.15		55.15	64
1400	Fire rated, 4.5 psf, 20' maximum height		160	.100		47	4.59		51.59	58.50
1500	Vinyl clad wood or steel, electric operation, 5.0 psf		160	.100		57	4.59		61.59	70
1900	Wood, non-acoustic, birch or mahogany, to 10' high		300	.053		30.50	2.45		32.95	38

10 22 39 – Folding Panel Partitions

10 22 39.10 Partitions, Folding Panel

0010	PARTITIONS, FOLDING PANEL, acoustic, wood									
0100	Vinyl faced, to 18' high, 6 psf, minimum	2 Carp	60	.267	S.F.	57	12.25		69.25	81.50
0150	Average		45	.356		68	16.30		84.30	99.50
0200	Maximum		30	.533		87.50	24.50		112	134
0400	Plastic laminate or hardwood finish, minimum	▼	60	.267	▼	58.50	12.25		70.75	83.50

10 22 Partitions

10 22 39 – Folding Panel Partitions

10 22 39.10 Partitions, Folding Panel		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0500	Maximum	2 Carp	30	.533	S.F.	62.50	24.50		87	106
0600	Wood, low acaustical type, 4.5 psf, to 14' high		50	.320		42.50	14.65		57.15	69.50
1100	Steel, acaustical, 9 to 12 lb. per S.F., vinyl faced, minimum		60	.267		60.50	12.25		72.75	85.50
1200	Maximum		30	.533		74	24.50		98.50	119
1700	Aluminum framed, acaustical, to 12' high, 5.5 psf, minimum		60	.267		41	12.25		53.25	64
1800	Maximum		30	.533		49.50	24.50		74	91.50
2000	6.5 lb. per S.F., minimum		60	.267		43	12.25		55.25	66
2100	Maximum	▼	30	.533	▼	53	24.50		77.50	96

10 22 43 – Sliding Partitions

10 22 43.10 Partitions, Sliding

0010	PARTITIONS, SLIDING									
0020	Acaustic air wall, 1-5/8" thick, minimum	2 Carp	375	.043	S.F.	33	1.96		34.96	39.50
0100	Maximum		365	.044		56.50	2.01		58.51	65
0300	2-1/4" thick, minimum		360	.044		37	2.04		39.04	44
0400	Maximum	▼	330	.048	▼	65	2.22		67.22	75
0600	Far track type, add to above				L.F.	121			121	133
0700	Overhead track type, acaustical, 3" thick, 11 psf, minimum	2 Carp	350	.046	S.F.	83.50	2.10		85.60	94.50
0800	Maximum	"	300	.053	"	100	2.45		102.45	114

10 26 Wall and Door Protection

10 26 13 – Corner Guards

10 26 13.10 Metal Corner Guards

0010	METAL CORNER GUARDS									
0020	Steel angle w/anchors, 1" x 1" x 1/4", 1.3#/L.F.	2 Carp	160	.100	L.F.	6.25	4.59		10.84	14
0100	2" x 2" x 1/4" angles, 3.2#/L.F.		150	.107		10.20	4.89		15.09	18.75
0200	3" x 3" x 5/16" angles, 6.1#/L.F.		140	.114		13.80	5.25		19.05	23.50
0300	4" x 4" x 5/16" angles, 8.2#/L.F.	▼	120	.133		17.40	6.10		23.50	28.50
0350	Far angles drilled and anchored to masonry, add					15%	120%			
0370	Drilled and anchored to concrete, add					20%	170%			
0400	Far galvanized angles, add					35%				
0450	Far stainless steel angles, add					100%				
0500	Steel door track/wheel guards, 4' - 0" high	E-4	22	1.455	Ea.	109	75	6.45	190.45	259
0800	Pipe bumper for truck doors, 8' long, 6" diameter, filled		20	1.600		685	82.50	7.10	774.60	905
0900	8" diameter		20	1.600		930	82.50	7.10	1,019.60	1,175
1000	Wall protection, stainless steel, 16 ga, 48" x 36" tall, screwed to studs	2 Skwk	500	.032	S.F.	8.45	1.51		9.96	11.65
1050	Wall end guard, stainless steel, 16 ga, 36" tall, screwed to studs	1 Skwk	30	.267	Ea.	19	12.60		31.60	40.50

10 26 13.20 Corner Protection

0010	CORNER PROTECTION									
0100	Stainless steel, 16 ga., adhesive mount, 3-1/2" leg	1 Carp	80	.100	L.F.	23	4.59		27.59	32
0200	12 ga. stainless, adhesive mount	"	80	.100		26.50	4.59		31.09	36
0300	Far screw mount, add						10%			
0500	Vinyl acrylic, adhesive mount, 3" leg	1 Carp	128	.063		8.60	2.87		11.47	13.90
0550	1-1/2" leg		160	.050		4.83	2.29		7.12	8.85
0600	Screw mounted, 3" leg		80	.100		9.55	4.59		14.14	17.60
0650	1-1/2" leg		100	.080		4.83	3.67		8.50	10.95
0700	Clear plastic, screw mounted, 2-1/2"		60	.133		4.37	6.10		10.47	14.25
1000	Vinyl cover, alum. retainer, surface mount, 3" x 3"		48	.167		10.45	7.65		18.10	23.50
1050	2" x 2"		48	.167		9.45	7.65		17.10	22
1100	Flush mounted, 3" x 3"		32	.250		20.50	11.45		31.95	40
1150	2" x 2"	▼	32	.250	▼	16.70	11.45		28.15	36

10 26 Wall and Door Protection

10 26 16 – Bumper Guards

10 26 16.10 Wallguard		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WALLGUARD									
0400	Rub rail, vinyl, adhesive mounted	1 Carp	185	.043	L.F.	8.70	1.98		10.68	12.60
0500	Neoprene, aluminum backing, 1-1/2" x 2"		110	.073		8.80	3.33		12.13	14.85
1000	Trolley rail, PVC, clipped to wall, 5" high		185	.043		8.80	1.98		10.78	12.75
1050	8" high		180	.044		14.70	2.04		16.74	19.30
1200	Bed bumper, vinyl acrylic, alum. retainer, 21" long		10	.800	Ea.	40.50	36.50		77	101
1300	53" long with aligner		9	.889	"	102	41		143	176
1400	Bumper, vinyl cover, alum. retainer, cush. mnt., 1-1/2" x 2-3/4"		80	.100	L.F.	14.20	4.59		18.79	23
1500	2" x 4-1/4"		80	.100		20.50	4.59		25.09	30
1600	Surface mounted, 1-3/4" x 3-5/8"		80	.100		11.95	4.59		16.54	20.50
1700	Bumper rail, stainless steel, flat bar on brackets, 4" x 1/4"	2 Skwk	120	.133		44	6.30		50.30	58.50
1750	Wallguard stainless steel baseboard, 12" tall, adhesive applied	"	260	.062		32	2.91		34.91	40
2000	Crash rail, vinyl cover, alum. retainer, 1" x 4"	1 Carp	110	.073		11.05	3.33		14.38	17.30
2100	1" x 8"		90	.089		18.15	4.08		22.23	26.50
2150	Vinyl inserts, aluminum plate, 1" x 2-1/2"		110	.073		14.90	3.33		18.23	21.50
2200	1" x 5"		90	.089		23	4.08		27.08	32
3000	Handrail/bumper, vinyl cover, alum. retainer									
3010	Bracket mounted, flat rail, 5-1/2"	1 Carp	80	.100	L.F.	18.30	4.59		22.89	27
3100	6-1/2"		80	.100		23	4.59		27.59	32
3200	Brnze bracket, 1-3/4" diam. rail		80	.100		16.50	4.59		21.09	25.50

10 28 Toilet, Bath, and Laundry Accessories

10 28 13 – Toilet Accessories

10 28 13.13 Commercial Toilet Accessories

0010	COMMERCIAL TOILET ACCESSORIES									
0200	Curtain rod, stainless steel, 5' long, 1" diameter	1 Carp	13	.615	Ea.	26.50	28		54.50	72.50
0300	1-1/4" diameter		13	.615		30.50	28		58.50	77
0350	Chrome, 1" diameter		13	.615		32.50	28		60.50	79
0360	For vinyl curtain, add		1950	.004	S.F.	.84	.19		1.03	1.21
0400	Diaper changing station, horizontal, wall mounted, plastic		10	.800	Ea.	223	36.50		259.50	300
0500	Dispenser units, combined soap & towel dispensers,									
0510	mirror and shelf, flush mounted	1 Carp	10	.800	Ea.	310	36.50		346.50	395
0600	Towel dispenser and waste receptacle,									
0610	18 gallon capacity	1 Carp	10	.800	Ea.	286	36.50		322.50	370
0800	Grab bar, straight, 1-1/4" diameter, stainless steel, 18" long		24	.333		29	15.30		44.30	55.50
0900	24" long		23	.348		29.50	15.95		45.45	57
1000	30" long		22	.364		31.50	16.65		48.15	60
1100	36" long		20	.400		38.50	18.35		56.85	71
1105	42" long		20	.400		46	18.35		64.35	79
1120	Corner, 36" long		20	.400		85.50	18.35		103.85	123
1200	1-1/2" diameter, 24" long		23	.348		31	15.95		46.95	58.50
1300	36" long		20	.400		33.50	18.35		51.85	65.50
1310	42" long		18	.444		43	20.50		63.50	79
1500	Tub bar, 1-1/4" diameter, 24" x 36"		14	.571		92.50	26		118.50	143
1600	Plus vertical arm		12	.667		97.50	30.50		128	154
1900	End tub bar, 1" diameter, 90° angle, 16" x 32"		12	.667		109	30.50		139.50	167
2010	Tub/shower/toilet, 2-wall, 36" x 24"		12	.667		83	30.50		113.50	139
2300	Hand dryer, surface mounted, electric, 115 volt, 20 amp		4	2		430	91.50		521.50	615
2400	230 volt, 10 amp		4	2		745	91.50		836.50	960
2450	Hand dryer, touch free, 1400 watt, 81,000 rpm		4	2		1,025	91.50		1,116.50	1,275

10 28 Toilet, Bath, and Laundry Accessories

10 28 13 – Toilet Accessories

10 28 13.13 Commercial Toilet Accessories		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2600	Hat and coat strip, stainless steel, 4 hook, 36" long	1 Corp	24	.333	Ea.	75	15.30		90.30	106
2700	6 hook, 60" long		20	.400		131	18.35		149.35	173
3000	Mirror, with stainless steel 3/4" square frame, 18" x 24"		20	.400		47	18.35		65.35	80
3100	36" x 24"		15	.533		103	24.50		127.50	151
3200	48" x 24"		10	.800		139	36.50		175.50	210
3300	72" x 24"		6	1.333		256	61		317	375
3500	With 5" stainless steel shelf, 18" x 24"		20	.400		186	18.35		204.35	234
3600	36" x 24"		15	.533		217	24.50		241.50	277
3700	48" x 24"		10	.800		245	36.50		281.50	325
3800	72" x 24"		6	1.333		300	61		361	425
4100	Map holder strip, stainless steel, 5 holders, 48" long		20	.400		89	18.35		107.35	127
4200	Napkin/tampon dispenser, recessed		15	.533		525	24.50		549.50	615
4220	Semi-recessed		6.50	1.231		310	56.50		366.50	425
4250	Napkin receptacle, recessed		6.50	1.231		165	56.50		221.50	269
4300	Robe hook, single, regular		36	.222		18.10	10.20		28.30	35.50
4400	Heavy duty, concealed mounting		36	.222		21	10.20		31.20	38.50
4600	Soap dispenser, chrome, surface mounted, liquid		20	.400		46.50	18.35		64.85	79.50
4700	Powder		20	.400		55	18.35		73.35	89
5000	Recessed stainless steel, liquid		10	.800		137	36.50		173.50	208
5600	Shelf, stainless steel, 5" wide, 18 ga., 24" long		24	.333		68.50	15.30		83.80	99
5700	48" long		16	.500		135	23		158	185
5800	8" wide shelf, 18 ga., 24" long		22	.364		69	16.65		85.65	102
5900	48" long		14	.571		121	26		147	174
6000	Toilet seat cover dispenser, stainless steel, recessed		20	.400		167	18.35		185.35	212
6050	Surface mounted		15	.533		34.50	24.50		59	75
6100	Toilet tissue dispenser, surface mounted, SS, single roll		30	.267		17.80	12.25		30.05	38.50
6200	Double roll		24	.333		23.50	15.30		38.80	49.50
6240	Plastic, twin/jumbo dbl. roll		24	.333		26	15.30		41.30	52
6400	Towel bar, stainless steel, 18" long		23	.348		41.50	15.95		57.45	70.50
6500	30" long		21	.381		111	17.45		128.45	150
6700	Towel dispenser, stainless steel, surface mounted		16	.500		44.50	23		67.50	84.50
6800	Flush mounted, recessed		10	.800		257	36.50		293.50	340
6900	Plastic, touchless, battery operated		16	.500		80.50	23		103.50	124
7000	Towel holder, hotel type, 2 guest size		20	.400		51.50	18.35		69.85	85
7200	Towel shelf, stainless steel, 24" long, 8" wide		20	.400		59.50	18.35		77.85	94
7400	Tumbler holder, tumbler only		30	.267		15.90	12.25		28.15	36.50
7410	Tumbler holder		20	.400		9.10	18.35		27.45	38.50
7500	Soap, tumbler & toothbrush		30	.267		19.60	12.25		31.85	40.50
7510	Tumbler & toothbrush holder		20	.400		12.60	18.35		30.95	42.50
7700	Wall urn ash receiver, surface mount, 11" long		12	.667		95	30.50		125.50	151
7800	7-1/2", long		18	.444		128	20.50		148.50	172
8000	Waste receptacles, stainless steel, with tap, 13 gallon		10	.800		295	36.50		331.50	380
8100	36 gallon		8	1		395	46		441	505

10 28 16 – Bath Accessories

10 28 16.20 Medicine Cabinets

0010	MEDICINE CABINETS									
0020	With mirror, sst frame, 16" x 22", unlighted	1 Corp	14	.571	Ea.	95	26		121	146
0100	Wood frame		14	.571		136	26		162	191
0300	Sliding mirror doors, 20" x 16" x 4-3/4", unlighted		7	1.143		125	52.50		177.50	218
0400	24" x 19" x 8-1/2", lighted		5	1.600		179	73.50		252.50	310
0600	Triple door, 30" x 32", unlighted, plywood body		7	1.143		320	52.50		372.50	430
0700	Steel body		7	1.143		350	52.50		402.50	465

10 28 Toilet, Bath, and Laundry Accessories

10 28 16 – Bath Accessories

10 28 16.20 Medicine Cabinets		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0900	Oak door, wood body, beveled mirror, single door	1 Corp	7	1.143	Ea.	195	52.50		247.50	295
1000	Double door		6	1.333		390	61		451	525
1200	Hotel cabinets, stainless, with lower shelf, unlighted		10	.800		200	36.50		236.50	276
1300	Lighted		5	1.600		305	73.50		378.50	450

10 28 23 – Laundry Accessories

10 28 23.13 Built-In Ironing Boards

0010	BUILT-IN IRONING BOARDS									
0020	Including cabinet, board & light, minimum	1 Corp	2	4	Ea.	365	183		548	685
0100	Maximum, see also Section 11 23 23.13	"	1.50	5.333	"	595	245		840	1,025

10 31 Manufactured Fireplaces

10 31 13 – Manufactured Fireplace Chimneys

10 31 13.10 Fireplace Chimneys

0010	FIREPLACE CHIMNEYS									
0500	Chimney dbl. wall, all stainless, over 8'-6", 7" diam., odd to fireplace	1 Corp	33	.242	V.L.F.	83.50	11.10		94.60	109
0600	10" diameter, add to fireplace		32	.250		112	11.45		123.45	142
0700	12" diameter, add to fireplace		31	.258		159	11.85		170.85	193
0800	14" diameter, odd to fireplace		30	.267		243	12.25		255.25	286
1000	Simulated brick chimney top, 4' high, 16" x 16"		10	.800	Ea.	425	36.50		461.50	525
1100	24" x 24"		7	1.143	"	540	52.50		592.50	675

10 31 13.20 Chimney Accessories

0010	CHIMNEY ACCESSORIES									
0020	Chimney screens, galv., 13" x 13" flue	1 Bric	8	1	Ea.	58.50	45.50		104	134
0050	24" x 24" flue		5	1.600		124	73		197	248
0200	Stainless steel, 13" x 13" flue		8	1		97.50	45.50		143	177
0250	20" x 20" flue		5	1.600		152	73		225	278
2400	Squirrel and bird screens, galvanized, 8" x 8" flue		16	.500		53	23		76	93.50
2450	13" x 13" flue		12	.667		55	30.50		85.50	107

10 31 16 – Manufactured Fireplace Forms

10 31 16.10 Fireplace Forms

0010	FIREPLACE FORMS									
1800	Fireplace forms, no accessories, 32" opening	1 Bric	3	2.667	Ea.	670	122		792	925
1900	36" opening		2.50	3.200		855	146		1,001	1,150
2000	40" opening		2	4		1,125	182		1,307	1,525
2100	78" opening		1.50	5.333		1,650	243		1,893	2,200

10 31 23 – Prefabricated Fireplaces

10 31 23.10 Fireplace, Prefabricated

0010	FIREPLACE, PREFABRICATED , free standing or wall hung									
0100	With hood & screen, minimum	1 Corp	1.30	6.154	Ea.	1,200	282		1,482	1,750
0150	Average		1	8		1,450	365		1,815	2,175
0200	Maximum		.90	8.889		2,725	410		3,135	3,625
1500	Simulated logs, gas fired, 40,000 BTU, 2' long, minimum		7	1.143	Set	485	52.50		537.50	615
1600	Maximum		6	1.333		1,125	61		1,186	1,350
1700	Electric, 1,500 BTU, 1'-6" long, minimum		7	1.143		200	52.50		252.50	300
1800	11,500 BTU, maximum		6	1.333		300	61		361	430
2000	Fireplace, built-in, 36" hearth, radiant		1.30	6.154	Ea.	660	282		942	1,175
2100	Recirculating, small fan		1	8		945	365		1,310	1,625
2150	Large fan		.90	8.889		1,900	410		2,310	2,725
2200	42" hearth, radiant		1.20	6.667		890	305		1,195	1,450

10 31 Manufactured Fireplaces

10 31 23 – Prefabricated Fireplaces

10 31 23.10 Fireplace, Prefabricated		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2300	Recirculating, small fan	1 Carp	.90	8.889	Ea.	1,175	410		1,585	1,925
2350	Large fan		.80	10		1,300	460		1,760	2,125
2400	48" hearth, radiant		1.10	7.273		2,075	335		2,410	2,800
2500	Recirculating, small fan		.80	10		2,350	460		2,810	3,300
2550	Large fan		.70	11.429		2,375	525		2,900	3,400
3000	See through, including doors		.80	10		2,525	460		2,985	3,500
3200	Corner (2 wall)		1	8		3,250	365		3,615	4,150

10 32 Fireplace Specialties

10 32 13 – Fireplace Dampers

10 32 13.10 Dampers

0010	DAMPERS									
0800	Damper, rotary control, steel, 30" opening	1 Bric	6	1.333	Ea.	119	61		180	224
0850	Cast iron, 30" opening		6	1.333		125	61		186	230
0880	36" opening		6	1.333		127	61		188	233
0900	48" opening		6	1.333		167	61		228	277
0920	60" opening		6	1.333		355	61		416	485
0950	72" opening		5	1.600		425	73		498	575
1000	84" opening, special order		5	1.600		910	73		983	1,100
1050	96" opening, special order		4	2		925	91		1,016	1,175
1200	Steel plate, poker control, 60" opening		8	1		320	45.50		365.50	425
1250	84" opening, special order		5	1.600		585	73		658	755
1400	"Universal" type, chain operated, 32" x 20" opening		8	1		250	45.50		295.50	345
1450	48" x 24" opening		5	1.600		375	73		448	520

10 32 23 – Fireplace Doors

10 32 23.10 Doors

0010	DOORS									
0400	Cleanout doors and frames, cast iron, 8" x 8"	1 Bric	12	.667	Ea.	41	30.50		71.50	91.50
0450	12" x 12"		10	.800		108	36.50		144.50	175
0500	18" x 24"		8	1		150	45.50		195.50	235
0550	Cast iron frame, steel door, 24" x 30"		5	1.600		315	73		388	455
1600	Dutch Oven door and frame, cast iron, 12" x 15" opening		13	.615		131	28		159	188
1650	Copper plated, 12" x 15" opening		13	.615		257	28		285	325

10 35 Stoves

10 35 13 – Heating Stoves

10 35 13.10 Woodburning Stoves

0010	WOODBURNING STOVES									
0015	Cast iron, minimum	2 Carp	1.30	12.308	Ea.	980	565		1,545	1,950
0020	Average		1	16		1,825	735		2,560	3,150
0030	Maximum		.80	20		2,525	915		3,440	4,200
0050	For gas log lighter, odd					45			45	49.50

10 43 Emergency Aid Specialties

10 43 13 – Defibrillator Cabinets

10 43 13.05 Defibrillator Cabinets		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	DEFIBRILLATOR CABINETS, nat equipped, stainless steel									
0050	Defibrillator, cabinet, stainless steel with strabe & alarm 12" x 27"	1 Corp	10	.800	Ea.	430	36.50		466.50	525
0100	Autamatic External Defibrillatar	"	30	.267	"	1,350	12.25		1,362.25	1,500

10 44 Fire Protection Specialties

10 44 13 – Fire Protection Cabinets

10 44 13.53 Fire Equipment Cabinets

0010	FIRE EQUIPMENT CABINETS, nat equipped, 20 ga. steel bax									
0040	recessed, D.S. glass in door, bax size given									
1000	Portable extinguisher, single, 8" x 12" x 27", olum. door & frame	Q-12	8	2	Ea.	151	99.50		250.50	320
1100	Steel door ond frame		8	2		105	99.50		204.50	266
2700	Fire blanket & extinguisher cab, inc blanket, rec stl., 14" x 40" x 8"		7	2.286		179	114		293	370
2800	Fire blanket cab, inc blanket, surf mtd, stl, 15"x10"x5", w/pwdr coat fin	▼	8	2	▼	90	99.50		189.50	250
3000	Hase rack assy., 1-1/2" volve & 100' hase, 24" x 40" x 5-1/2"									
3100	Aluminum daar and frame	Q-12	6	2.667	Ea.	350	133		483	585
3200	Steel daar and frame		6	2.667		234	133		367	460
3300	Stainless steel door and frame		6	2.667		475	133		608	720
4000	Hase rack ossy., 2-1/2" x 1-1/2" valve, 100' hase, 24" x 40" x 8"									
4100	Aluminum daar and frame	Q-12	6	2.667	Ea.	355	133		488	590
4200	Steel door ond frame		6	2.667		241	133		374	465
4300	Stainless steel daar and frame	▼	6	2.667	▼	475	133		608	720
5000	Hase rack assy., 2-1/2" x 1-1/2" volve, 100' hase									
5010	and extinguisher, 30" x 40" x 8"									
5100	Aluminum daar and frame	Q-12	5	3.200	Ea.	455	160		615	740
5200	Steel daar and frame		5	3.200		300	160		460	570
5300	Stainless steel daar and frame		5	3.200		550	160		710	845
8000	Volve cobinet far 2-1/2" FD angle valve, 18" x 18" x 8"									
8100	Aluminum daar and frame	Q-12	12	1.333	Ea.	156	66.50		222.50	272
8200	Steel door ond frame		12	1.333		129	66.50		195.50	242
8300	Stainless steel daar and frame	▼	12	1.333	▼	210	66.50		276.50	330

10 44 16 – Fire Extinguishers

10 44 16.13 Portable Fire Extinguishers

0010	PORTABLE FIRE EXTINGUISHERS									
0140	CO ₂ , with hase and "H" harn, 10 lb.				Ea.	268			268	295
0160	15 lb.					345			345	380
0180	20 lb.					380			380	420
1000	Dry chemical, pressurized									
1040	Standard type, portable, painted, 2-1/2 lb.				Ea.	36.50			36.50	40
1060	5 lb.					50			50	55
1080	10 lb.					79.50			79.50	87.50
1100	20 lb.					134			134	148
1120	30 lb.					395			395	435
1300	Stondard type, wheeled, 150 lb.					2,350			2,350	2,600
2000	ABC oll purpase type, portable, 2-1/2 lb.					21			21	23.50
2060	5 lb.					26.50			26.50	29
2080	9-1/2 lb.					44			44	48
2100	20 lb.					79.50			79.50	87.50
3500	Halatran 1, 2-1/2 lb.					126			126	139
3600	5 lb.					198			198	218
3700	11 lb.					390			390	430

10 44 Fire Protection Specialties

10 44 16 – Fire Extinguishers

10 44 16.13 Portable Fire Extinguishers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5000	Pressurized water, 2-1/2 gallon, stainless steel				Ea.	102			102	112
5060	With anti-freeze					106			106	116
9400	Installation of extinguishers, 12 or more, on nailable surface	1 Corp	30	.267			12.25		12.25	18.85
9420	On masonry or concrete	"	15	.533	▼		24.50		24.50	37.50

10 44 16.16 Wheeled Fire Extinguisher Units

10 44 16.16 WHEELED FIRE EXTINGUISHER UNITS										
0010	CO ₂ , portable, with swivel horn									
0360	Wheeled type, cart mounted, 50 lb.				Ea.	1,100			1,100	1,200
0400	100 lb.				"	4,125			4,125	4,550
2200	ABC all purpose type									
2300	Wheeled, 45 lb.				Ea.	735			735	810
2360	150 lb.				"	1,850			1,850	2,025

10 51 Lockers

10 51 13 – Metal Lockers

10 51 13.10 Lockers

0011	LOCKERS steel, baked enamel, pre-assembled									
0110	Single tier box locker, 12" x 15" x 72"	1 Shee	20	.400	Ea.	239	22		261	297
0120	18" x 15" x 72"		20	.400		263	22		285	325
0130	12" x 18" x 72"		20	.400		267	22		289	325
0140	18" x 18" x 72"		20	.400		278	22		300	340
0410	Double tier, 12" x 15" x 36"		30	.267		236	14.60		250.60	283
0420	18" x 15" x 36"		30	.267		235	14.60		249.60	282
0430	12" x 18" x 36"		30	.267		266	14.60		280.60	315
0440	18" x 18" x 36"		30	.267		257	14.60		271.60	305
0500	Two person, 18" x 15" x 72"		20	.400		285	22		307	350
0510	18" x 18" x 72"		20	.400		293	22		315	360
0520	Duplex, 15" x 15" x 72"		20	.400		287	22		309	350
0530	15" x 21" x 72"		20	.400	▼	335	22		357	400
0600	5 tier box lockers, minimum		30	.267	Opng.	45	14.60		59.60	71.50
0700	Maximum		24	.333		52	18.25		70.25	85
0900	6 tier box lockers, minimum		36	.222		39.50	12.15		51.65	62
1000	Maximum		30	.267		47	14.60		61.60	74
1100	Wire meshed wardrobe, floor. mtd., open front varsity type		7.50	1.067	Ea.	261	58.50		319.50	375
2400	16-person locker unit with clothing rack									
2500	72 wide x 15" deep x 72" high	1 Shee	15	.533	Ea.	455	29		484	545
2550	18" deep	"	15	.533	"	625	29		654	735
3000	Wall mounted lockers, 4 person, with coat bar									
3100	48" wide x 18" deep x 12" high	1 Shee	20	.400	Ea.	315	22		337	380
3250	Rack w/24 wire mesh baskets		1.50	5.333	Set	365	292		657	845
3260	30 baskets		1.25	6.400		360	350		710	930
3270	36 baskets		.95	8.421		475	460		935	1,225
3280	42 baskets		.80	10		540	545		1,085	1,425
3300	For built-in lock with 2 keys, add				Ea.	13.30			13.30	14.60
3600	For hanger rods, add					1.86			1.86	2.05
3650	For number plate kit, 100 plates #1 - #100, add	1 Shee	4	2		70	109		179	244
3700	For locker base, closed front panel		90	.089		7.15	4.86		12.01	15.30
3710	End panel, bolted		36	.222		8.90	12.15		21.05	28.50
3800	For sloping top, 12" wide		24	.333		30.50	18.25		48.75	62
3810	15" wide		24	.333		33.50	18.25		51.75	65
3820	18" wide		24	.333		35.50	18.25		53.75	67

10 51 Lockers

10 51 13 – Metal Lockers

10 51 13.10 Lockers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3850	Slaping top end panel, 12" deep	1 Shee	72	.111	Ea.	11.10	6.10		17.20	21.50
3860	15" deep		72	.111		12.90	6.10		19	23.50
3870	18" deep		72	.111		13.65	6.10		19.75	24.50
3900	Far finish end panels, steel, 60" high, 15" deep		12	.667		50	36.50		86.50	111
3910	72" high, 12" deep		12	.667		50	36.50		86.50	111
3920	18" deep		12	.667		56	36.50		92.50	117
5000	Far 'ready to assemble' lockers,									
5010	Add to labor						75%			
5020	Deduct from material					20%				

10 51 26 – Plastic Lockers

10 51 26.13 Recycled Plastic Lockers

0011	RECYCLED PLASTIC LOCKERS, 30% recycled									
0110	Single tier box locker, 12" x 12" x 72"		1 Shee	8	1	Ea.	435	54.50	489.50	565
0120	12" x 15" x 72"			8	1		435	54.50	489.50	565
0130	12" x 18" x 72"			8	1		450	54.50	504.50	580
0410	Dauble tier, 12" x 12" x 72"			21	.381		455	21	476	530
0420	12" x 15" x 72"			21	.381		465	21	486	540
0430	12" x 18" x 72"			21	.381		475	21	496	550

10 51 53 – Locker Room Benches

10 51 53.10 Benches

0010	BENCHES									
2100	Lacker bench, laminated maple, top only		1 Shee	100	.080	L.F.	18	4.38	22.38	26.50
2200	Pedestals, steel pipe			25	.320	Ea.	43.50	17.50	61	74
2250	Plastic, 9.5" top with PVC pedestals			80	.100	L.F.	58	5.45	63.45	72.50

10 55 Postal Specialties

10 55 23 – Mail Boxes

10 55 23.10 Commercial Mail Boxes

0010	COMMERCIAL MAIL BOXES									
0020	Horiz., key lock, 5"H x 6"W x 15"D, alum., rear load		1 Carp	34	.235	Ea.	35	10.80	45.80	55
0100	Front loading			34	.235		35	10.80	45.80	55
0200	Dauble, 5"H x 12"W x 15"D, rear loading			26	.308		66.50	14.10	80.60	95.50
0300	Front loading			26	.308		70	14.10	84.10	99
0500	Quadruple, 10"H x 12"W x 15"D, rear loading			20	.400		98.50	18.35	116.85	137
0600	Front loading			20	.400		96.50	18.35	114.85	135
0800	Vertical, front load, 15"H x 5"W x 6"D, alum., per compartment			34	.235		30	10.80	40.80	49.50
0900	Branze, duranadic finish			34	.235		40	10.80	50.80	60.50
1000	Steel, enameled			34	.235		30	10.80	40.80	49.50
1700	Alphabetical directories, 120 names			10	.800		132	36.50	168.50	203
1800	Letter collection box			6	1.333		650	61	711	810
1830	Labby collection boxes, aluminum		2 Shee	5	3.200		1,700	175	1,875	2,150
1840	Branze or stainless		"	4.50	3.556		1,700	194	1,894	2,175
1900	Letter slot, residential		1 Carp	20	.400		80	18.35	98.35	117
2000	Past office type			8	1		105	46	151	187
2250	Key keeper, single key, aluminum			26	.308		37.50	14.10	51.60	63
2300	Steel, enameled			26	.308		116	14.10	130.10	150

10 56 Storage Assemblies

10 56 13 – Metal Storage Shelving

10 56 13.10 Shelving		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SHELVING									
0020	Metal, industrial, cross-braced, 3' wide, 12" deep	1 Sswk	175	.046	SF Shlf	7.45	2.34		9.79	12.30
0100	24" deep		330	.024		4.95	1.24		6.19	7.65
0300	4' wide, 12" deep		185	.043		6.35	2.21		8.56	10.90
0400	24" deep		380	.021		4.55	1.08		5.63	6.90
1200	Enclosed sides, cross-braced back, 3' wide, 12" deep		175	.046		11.70	2.34		14.04	16.95
1300	24" deep		290	.028		8.10	1.41		9.51	11.40
1500	Fully enclosed, sides and back, 3' wide, 12" deep		150	.053		13.90	2.73		16.63	20
1600	24" deep		255	.031		9.35	1.60		10.95	13.10
1800	4' wide, 12" deep		150	.053		9.50	2.73		12.23	15.25
1900	24" deep		290	.028		7.45	1.41		8.86	10.70
2200	Wide span, 1600 lb. capacity per shelf, 6' wide, 24" deep		380	.021		6.30	1.08		7.38	8.85
2400	36" deep		440	.018		6.75	.93		7.68	9.10
2600	8' wide, 24" deep		440	.018		6.35	.93		7.28	8.65
2800	36" deep	▼	520	.015		6.10	.79		6.89	8.10
4000	Pallet racks, steel frame 5,000 lb. capacity, 8' long, 36" deep	2 Sswk	450	.036		9.10	1.82		10.92	13.20
4200	42" deep		500	.032		8.25	1.64		9.89	12
4400	48" deep		520	.031		7.40	1.57		8.97	10.90

10 56 13.20 Parts Bins

0010	PARTS BINS metal, gray baked enamel finish									
0100	6'-3" high, 3' wide									
0300	12 bins, 18" wide x 12" high, 12" deep	2 Clob	10	1.600	Ea.	315	58.50		373.50	435
0400	24" deep		10	1.600		395	58.50		453.50	520
0600	72 bins, 6" wide x 6" high, 12" deep		8	2		525	73.50		598.50	690
0700	18" deep	▼	8	2	▼	825	73.50		898.50	1,025
1000	7'-3" high, 3' wide									
1200	14 bins, 18" wide x 12" high, 12" deep	2 Clob	10	1.600	Ea.	345	58.50		403.50	470
1300	24" deep		10	1.600		435	58.50		493.50	565
1500	84 bins, 6" wide x 6" high, 12" deep		8	2		890	73.50		963.50	1,100
1600	24" deep		8	2		1,075	73.50		1,148.50	1,325

10 57 Wardrobe and Closet Specialties

10 57 13 – Hat and Coat Racks

10 57 13.10 Coat Racks and Wardrobes

0010	COAT RACKS AND WARDROBES									
0020	Hat & coat rack, floor model, 6 hangers									
0050	Standing, beech wood, 21" x 21" x 72", chrome				Ea.	237			237	260
0100	18 ga. tubular steel, 21" x 21" x 69", wood walnut				"	299			299	330
0500	16 ga. steel frame, 22 ga. steel shelves									
0650	Single pedestal, 30" x 18" x 63"				Ea.	262			262	289
0800	Single face rack, 29" x 18-1/2" x 62"					291			291	320
0900	51" x 18-1/2" x 70"					410			410	450
0910	Double face rack, 39" x 26" x 70"					370			370	405
0920	63" x 26" x 70"					465			465	515
0940	For 2" ball casters, odd				Set	88			88	97
1400	Utility hook strips, 3/8" x 2-1/2" x 18", 6 hooks	1 Corp	48	.167	Ea.	61	7.65		68.65	79
1500	34" long, 12 hooks	"	48	.167	"	62	7.65		69.65	80
1650	Wall mounted racks, 16 ga. steel frame, 22 ga. steel shelves									
1850	12" x 15" x 26", 6 hangers	1 Corp	32	.250	Ea.	155	11.45		166.45	188
2000	12" x 15" x 50", 12 hangers	"	32	.250	"	181	11.45		192.45	217
2150	Wardrobe cabinet, steel, baked enamel finish									

10 57 Wardrobe and Closet Specialties

10 57 13 – Hat and Coat Racks

10 57 13.10 Coat Racks and Wardrobes

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
2300	36" x 21" x 78", incl. top shelf & hanger rod				Ea.	315			315	350
2400	Wardrobe, 24" x 24" x 76", KD, w/door, hospital, baked enamel steel	1 Carp	2	4		570	183		753	910
2500	Hardwood	"	2	4		1,275	183		1,458	1,675

10 57 23 – Closet and Utility Shelving

10 57 23.19 Wood Closet and Utility Shelving

0010 WOOD CLOSET AND UTILITY SHELVING

0020	Pine, clear grade, no edge band, 1" x 8"	1 Carp	115	.070	L.F.	3.04	3.19		6.23	8.25
0100	1" x 10"		110	.073		3.78	3.33		7.11	9.30
0200	1" x 12"		105	.076		4.56	3.49		8.05	10.40
0600	Plywood, 3/4" thick with lumber edge, 12" wide		75	.107		1.78	4.89		6.67	9.50
0700	24" wide		70	.114		3.18	5.25		8.43	11.60
0900	Backcase, clear grade pine, shelves 12" O.C., 8" deep, per S.F. shelf		70	.114	S.F.	9.90	5.25		15.15	18.95
1000	12" deep shelves		65	.123	"	14.80	5.65		20.45	25
1200	Adjustable closet rod and shelf, 12" wide, 3' long		20	.400	Ea.	10.95	18.35		29.30	40.50
1300	8' long		15	.533	"	20	24.50		44.50	59.50
1500	Prefinished shelves with supports, stack, 8" wide		75	.107	L.F.	3.38	4.89		8.27	11.25
1600	10" wide		70	.114	"	4.75	5.25		10	13.35

10 71 Exterior Protection

10 71 13 – Exterior Sun Control Devices

10 71 13.19 Rolling Exterior Shutters

0010 ROLLING EXTERIOR SHUTTERS

0020	Roll-up, manual operation, aluminum, 3' x 4', incl. frame	2 Carp	8	2	Ea.	675	91.50		766.50	885
0030	6' x 7'	"	8	2	"	1,575	91.50		1,666.50	1,875

10 73 Protective Covers

10 73 13 – Awnings

10 73 13.10 Awnings, Fabric

0010 AWNINGS, FABRIC

0020	Including acrylic canvas and frame, standard design									
0100	Door and window, slope, 3' high, 4' wide	1 Carp	4.50	1.778	Ea.	720	81.50		801.50	915
0110	6' wide		3.50	2.286		925	105		1,030	1,175
0120	8' wide		3	2.667		1,125	122		1,247	1,450
0200	Quarter round convex, 4' wide		3	2.667		1,125	122		1,247	1,425
0210	6' wide		2.25	3.556		1,450	163		1,613	1,850
0220	8' wide		1.80	4.444		1,775	204		1,979	2,275
0300	Dome, 4' wide		7.50	1.067		430	49		479	550
0310	6' wide		3.50	2.286		970	105		1,075	1,225
0320	8' wide		2	4		1,725	183		1,908	2,175
0350	Elongated dome, 4' wide		1.33	6.015		1,625	276		1,901	2,200
0360	6' wide		1.11	7.207		1,925	330		2,255	2,625
0370	8' wide		1	8		2,275	365		2,640	3,075
1000	Entry or walkway, peak, 12' long, 4' wide	2 Carp	.90	17.778		5,125	815		5,940	6,875
1010	6' wide		.60	26.667		7,875	1,225		9,100	10,600
1020	8' wide		.40	40		10,900	1,825		12,725	14,800
1100	Radius with dome end, 4' wide		1.10	14.545		3,875	665		4,540	5,300
1110	6' wide		.70	22.857		6,225	1,050		7,275	8,475
1120	8' wide		.50	32		8,875	1,475		10,350	12,000
2000	Retractable lateral arm awning, manual									

10 73 Protective Covers

10 73 13 – Awnings

10 73 13.10 Awnings, Fabric		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2010	Ta 12' wide, 8' - 6" projection	2 Corp	1.70	9.412	Ea.	1,150	430		1,580	1,950
2020	Ta 14' wide, 8' - 6" projection		1.10	14.545		1,350	665		2,015	2,500
2030	Ta 19' wide, 8' - 6" projection		.85	18.824		1,825	865		2,690	3,350
2040	Ta 24' wide, 8' - 6" projection		.67	23.881		2,300	1,100		3,400	4,250
2050	Motor far above, odd	1 Corp	2.67	3		990	138		1,128	1,300
3000	Potia/deck canopy with frame									
3010	12' wide, 12' projection	2 Corp	2	8	Ea.	1,625	365		1,990	2,375
3020	16' wide, 14' projection	"	1.20	13.333		2,550	610		3,160	3,750
9000	Far fire retardant canvas, add					7%				
9010	For lettering or graphics, add					35%				
9020	Far pointed or coated acrylic canvas, deduct					8%				
9030	For translucent or opaque vinyl canvas, add					10%				
9040	Far 6 or more units, deduct					20%	15%			

10 73 16 – Canopies

10 73 16.20 Metal Canopies

0010 METAL CANOPIES										
0020	Wall hung, .032", aluminum, prefinished, 8' x 10'	K-2	1.30	18.462	Ea.	1,950	865	256	3,071	3,900
0300	8' x 20'		1.10	21.818		3,425	1,025	305	4,755	5,850
0500	10' x 10'		1.30	18.462		2,575	865	256	3,696	4,575
0700	10' x 20'		1.10	21.818		4,300	1,025	305	5,630	6,800
1000	12' x 20'		1	24		5,150	1,125	335	6,610	7,975
1360	12' x 30'		.80	30		7,725	1,400	415	9,540	11,400
1700	12' x 40'	▼	.60	40		10,300	1,875	555	12,730	15,100
1900	For free standing units, odd					20%	10%			
2300	Aluminum entrance canopies, flat soffit, .032"									
2500	3'-6" x 4'-0", clear anodized	2 Corp	4	4	Ea.	915	183		1,098	1,275
2700	Bronze anodized		4	4		1,625	183		1,808	2,050
3000	Polyurethane painted		4	4		1,300	183		1,483	1,725
3300	4'-6" x 10'-0", clear anodized		2	8		2,525	365		2,890	3,350
3500	Bronze anodized		2	8		3,225	365		3,590	4,125
3700	Polyurethane painted	▼	2	8		2,700	365		3,065	3,550
4000	Wall downspout, 10 L.F., clear anodized	1 Corp	7	1.143		157	52.50		209.50	254
4300	Bronze anodized		7	1.143		274	52.50		326.50	380
4500	Polyurethane painted	▼	7	1.143		236	52.50		288.50	340
7000	Corport, baked vinyl finish, .032", 20' x 10', no foundations, min.	K-2	4	6	Cor	4,000	281	83.50	4,364.50	4,975
7250	Maximum		2	12	"	7,150	565	167	7,882	9,000
7500	Walkway cover, ta 12' wide, stl., vinyl finish, .032", no fndtns., min.		250	.096	S.F.	26.50	4.50	1.33	32.33	38
7750	Maximum	▼	200	.120	"	60	5.65	1.67	67.32	77.50

10 74 Manufactured Exterior Specialties

10 74 23 – Cupolas

10 74 23.10 Wood Cupolas

0010 WOOD CUPOLAS										
0020	Stock units, pine, painted, 18" sq., 28" high, alum. roof	1 Corp	4.10	1.951	Ea.	184	89.50		273.50	340
0100	Copper roof		3.80	2.105		255	96.50		351.50	430
0300	23" square, 33" high, aluminum roof		3.70	2.162		360	99		459	550
0400	Copper roof		3.30	2.424		470	111		581	685
0600	30" square, 37" high, aluminum roof		3.70	2.162		560	99		659	770
0700	Copper roof		3.30	2.424		670	111		781	905
0900	Hexagonal, 31" wide, 46" high, copper roof	▼	4	2	▼	860	91.50		951.50	1,075

10 74 Manufactured Exterior Specialties

10 74 23 – Cupolas

10 74 23.10 Wood Cupolas

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1000	36" wide, 50" high, copper roof	1 Corp	3.50	2.286	Ea.	1,400	105		1,505	1,700
1200	For deluxe stack units, add to above					25%				
1400	For custom built units, add to above					50%	50%			

10 74 29 – Steeples

10 74 29.10 Prefabricated Steeples

0010 PREFABRICATED STEEPLES

4000	Steeple, translucent fiberglass, 30" square, 15' high	F-3	2	20	Ea.	8,275	935	330	9,540	10,900
4150	25' high		1.80	22.222		9,650	1,050	370	11,070	12,600
4350	Opaque fiberglass, 24" square, 14' high		2	20		6,875	935	330	8,140	9,375
4500	28' high	▼	1.80	22.222		6,300	1,050	370	7,720	8,925
4600	Aluminum, baked finish, 16" square, 14' high					5,625			5,625	6,200
4620	20' high, 3'-6" base					9,425			9,425	10,400
4640	35' high, 8' base					36,300			36,300	39,900
4660	60' high, 14' base					76,500			76,500	84,000
4680	152' high, custom					624,500			624,500	687,000
4700	Parcelain enamel steeples, custom, 40' high	F-3	.50	80		14,100	3,750	1,325	19,175	22,800
4800	60' high	"	.30	133	▼	24,500	6,225	2,200	32,925	39,000

10 74 46 – Window Wells

10 74 46.10 Area Window Wells

0010 AREA WINDOW WELLS, Galvanized steel

0020	20 ga., 3'-2" wide, 1' deep	1 Sswk	29	.276	Ea.	16.95	14.10		31.05	43.50
0100	2' deep		23	.348		27.50	17.75		45.25	61.50
0300	16 ga., 3'-2" wide, 1' deep		29	.276		23	14.10		37.10	50.50
0400	3' deep		23	.348		47	17.75		64.75	83
0600	Welded grating for above, 15 lb., painted		45	.178		87.50	9.10		96.60	112
0700	Galvanized		45	.178		118	9.10		127.10	146
0900	Translucent plastic cap for above	▼	60	.133	▼	17.65	6.80		24.45	31.50

10 75 Flagpoles

10 75 16 – Ground-Set Flagpoles

10 75 16.10 Flagpoles

0010 FLAGPOLES, ground set

0050 Not including base or foundation

0100	Aluminum, tapered, ground set 20' high	K-1	2	8	Ea.	980	330	166	1,476	1,775
0200	25' high		1.70	9.412		1,150	390	196	1,736	2,050
0300	30' high		1.50	10.667		1,275	440	222	1,937	2,325
0400	35' high		1.40	11.429		1,800	470	238	2,508	2,950
0500	40' high		1.20	13.333		2,525	550	277	3,352	3,925
0600	50' high		1	16		3,100	660	335	4,095	4,775
0700	60' high		.90	17.778		5,075	730	370	6,175	7,125
0800	70' high		.80	20		8,250	825	415	9,490	10,800
1100	Counterbalanced, internal halyard, 20' high		1.80	8.889		2,600	365	185	3,150	3,650
1200	30' high		1.50	10.667		2,900	440	222	3,562	4,125
1300	40' high		1.30	12.308		6,400	505	256	7,161	8,100
1400	50' high		1	16		8,900	660	335	9,895	11,200
2820	Aluminum, electronically operated, 30' high		1.40	11.429		4,375	470	238	5,083	5,800
2840	35' high		1.30	12.308		4,725	505	256	5,486	6,250
2860	39' high		1.10	14.545		5,150	600	305	6,055	6,925
2880	45' high		1	16		6,575	660	335	7,570	8,625
2900	50' high		.90	17.778		7,000	730	370	8,100	9,225

10 75 Flagpoles

10 75 16 – Ground-Set Flagpoles

10 75 16.10 Flagpoles		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labar	Equipment		
3000	Fiberglass, tapered, ground set, 23' high	K-1	2	8	Ea.	580	330	166	1,076	1,325
3100	29'-7" high		1.50	10.667		1,525	440	222	2,187	2,600
3200	36'-1" high		1.40	11.429		1,975	470	238	2,683	3,150
3300	39'-5" high		1.20	13.333		2,200	550	277	3,027	3,575
3400	49'-2" high		1	16		4,100	660	335	5,095	5,900
3500	59' high		.90	17.778		5,225	730	370	6,325	7,275
4300	Steel, direct imbedded installation									
4400	Internal hollyord, 20' high	K-1	2.50	6.400	Ea.	1,300	264	133	1,697	1,975
4500	25' high		2.50	6.400		1,950	264	133	2,347	2,700
4600	30' high		2.30	6.957		2,325	286	145	2,756	3,175
4700	40' high		2.10	7.619		3,125	315	159	3,599	4,075
4800	50' high		1.90	8.421		4,125	345	175	4,645	5,250
5000	60' high		1.80	8.889		6,875	365	185	7,425	8,325
5100	70' high		1.60	10		7,475	410	208	8,093	9,075
5200	80' high		1.40	11.429		9,625	470	238	10,333	11,600
5300	90' high		1.20	13.333		15,000	550	277	15,827	17,700
5500	100' high		1	16		15,500	660	335	16,495	18,500
6400	Wood poles, tapered, clear vertical grain fir with tilting									
6410	base, nat incl. foundation, 4" butt, 25' high	K-1	1.90	8.421	Ea.	1,400	345	175	1,920	2,250
6800	6" butt, 30' high	"	1.30	12.308	"	2,575	505	256	3,336	3,875
7300	Foundations for flagpoles, including									
7400	excavation and concrete, to 35' high poles	C-1	10	3.200	Ea.	675	139		814	960
7600	40' to 50' high		3.50	9.143		1,250	400		1,650	2,000
7700	Over 60' high		2	16		1,550	695		2,245	2,800

10 75 23 – Wall-Mounted Flagpoles

10 75 23.10 Flagpoles

0010	FLAGPOLES , structure maunted									
0100	Fiberglass, vertical wall set, 19'-8" long	K-1	1.50	10.667	Ea.	1,350	440	222	2,012	2,425
0200	23' lang		1.40	11.429		1,450	470	238	2,158	2,550
0300	26'-3" lang		1.30	12.308		1,850	505	256	2,611	3,075
0800	19'-8" long outrigger		1.30	12.308		1,225	505	256	1,986	2,400
1300	Aluminum, vertical wall set, tapered, with base, 20' high		1.20	13.333		965	550	277	1,792	2,225
1400	29'-6" high		1	16		2,650	660	335	3,645	4,300
2400	Outrigger poles with base, 12' long		1.30	12.308		1,100	505	256	1,861	2,250
2500	14' lang		1	16		1,425	660	335	2,420	2,950

10 81 Pest Control Devices

10 81 13 – Bird Control Devices

10 81 13.10 Bird Control Netting

0010	BIRD CONTROL NETTING									
0020	1/8" square mesh	4 Clob	4000	.008	S.F.	.67	.29		.96	1.19
0100	1/4" square mesh		4000	.008		.78	.29		1.07	1.31
0120	1/2" square mesh		4000	.008		.12	.29		.41	.58
0140	5/8" x 3/4" mesh		4000	.008		.07	.29		.36	.53
0160	1-1/4" x 1-1/2" mesh		4000	.008		.13	.29		.42	.59
0200	4" square mesh	▼	4000	.008	▼	.10	.29		.39	.56
1000	Paly clips				Ea.	.05			.05	.06

10 88 Scales

10 88 05 – Commercial Scales

10 88 05.10 Scales		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SCALES									
0700	Truck scales, incl. steel weigh bridge,									
0800	not including foundation, pits									
1550	Digital, electronic, 100 ton capacity, steel deck 12' x 10' platform	3 Carp	.20	120	Ea.	13,500	5,500		19,000	23,400
1600	40' x 10' platform		.14	171		27,000	7,850		34,850	41,800
1640	60' x 10' platform		.13	184		35,700	8,475		44,175	52,500
1680	70' x 10' platform	▼	.12	200		37,900	9,175		47,075	56,000
2000	For standard automatic printing device, add					1,400			1,400	1,525
2100	For remote reading electronic system, add					2,625			2,625	2,900
2300	Concrete foundation pits for above, 8' x 6', 5 C.Y. required	C-1	.50	64		1,025	2,775		3,800	5,425
2400	14' x 6' platform, 10 C.Y. required		.35	91.429		1,500	3,975		5,475	7,800
2600	50' x 10' platform, 30 C.Y. required		.25	128		2,025	5,575		7,600	10,800
2700	70' x 10' platform, 40 C.Y. required	▼	.15	213		4,450	9,300		13,750	19,200
2750	Crane scales, dial, 1 ton capacity					1,125			1,125	1,225
2780	5 ton capacity					1,500			1,500	1,650
2800	Digital, 1 ton capacity					1,900			1,900	2,075
2850	10 ton capacity					5,050			5,050	5,550
2900	Low profile electronic warehouse scale,									
3000	not incl. printer, 4' x 4' platform, 10,000 lb. capacity	2 Carp	.30	53.333	Ea.	1,425	2,450		3,875	5,325
3300	5' x 7' platform, 10,000 lb. capacity		.25	64		4,625	2,925		7,550	9,625
3400	20,000 lb. capacity	▼	.20	80		5,700	3,675		9,375	11,900
3500	For printers, incl. time, date & numbering, add					1,000			1,000	1,100
3800	Portable, beam type, capacity 1000#, platform 18" x 24"					770			770	845
3900	Dial type, capacity 2000#, platform 24" x 24"					1,375			1,375	1,500
4000	Digital type, capacity 1000#, platform 24" x 30"					2,175			2,175	2,400
4100	Portable contractor truck scales, 50 ton cap., 40' x 10' platform					33,000			33,000	36,300
4200	60' x 10' platform					30,400			30,400	33,400

Estimating Tips

General

The items in this division are usually priced per square foot or each. Many of these items are purchased by the owner for installation by the contractor. Check the specifications for responsibilities and include time for receiving, storage, installation, and mechanical and electrical hookups in the appropriate divisions.

- Many items in Division 11 require some type of support system that is not usually furnished with the item. Examples of these systems include blocking for the attachment of casework and support angles for ceiling-hung projection screens. The required blocking or supports must be added to the estimate in the appropriate division.
- Some items in Division 11 may require assembly or electrical hookups. Verify the amount of assembly required or the need for a hard electrical connection and add the appropriate costs.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

11 05 Common Work Results for Equipment

11 05 05 – Selective Equipment Demolition

11 05 05.10 Selective Demolition		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labar	Equipment		
0010	SELECTIVE DEMOLITION									
0130	Central vacuum, motor unit, residential or commercial	1 Clob	2	4	Ea.		147		147	226
0210	Vault door and frame	2 Skwk	2	8			380		380	585
0215	Day gate, for vault	"	3	5.333			252		252	390
0380	Bank equipment, teller window, bullet resistant	1 Clob	1.20	6.667	▼		244		244	375
0381	Counter	2 Clob	1.50	10.667	Station		390		390	605
0382	Drive-up window, including drawer and glass		1.50	10.667	"		390		390	605
0383	Thru-wall boxes and chests, selective demolition		2.50	6.400	Ea.		235		235	360
0384	Bullet resistant partitions		20	.800	L.F.		29.50		29.50	45
0385	Pneumatic tube system, 2 lane drive-up	L-3	.45	35.556	Ea.		1,775		1,775	2,700
0386	Safety deposit box	1 Clob	50	.160	Opng.		5.85		5.85	9.05
0387	Surveillance system, video, complete	2 Elec	2	8	Ea.		425		425	640
0410	Church equipment, misc moveable fixtures	2 Clob	1	16			585		585	905
0412	Steeple, to 28' high	F-3	3	13.333			625	221	846	1,200
0414	40' to 60' high	"	.80	50	▼		2,325	830	3,155	4,500
0510	Library equipment, bookshelves, wood, to 90" high	1 Clob	20	.400	L.F.		14.65		14.65	22.50
0515	Carrels, hardwood, 36" x 24"	"	9	.889	Ea.		32.50		32.50	50.50
0630	Stage equipment, light control panel	1 Elec	1	8	"		425		425	640
0632	Border lights		40	.200	L.F.		10.65		10.65	15.95
0634	Spotlights		8	1	Ea.		53.50		53.50	80
0636	Telescoping platforms and risers	2 Clob	175	.091	SF Stg.		3.35		3.35	5.15
1020	Barber equipment, hydraulic chair	1 Clob	40	.200	Ea.		7.35		7.35	11.30
1030	Checkout counter, supermarket or warehouse conveyor	2 Clob	18	.889			32.50		32.50	50.50
1040	Food cases, refrigerated or frozen	Q-5	6	2.667			140		140	212
1190	Laundry equipment, commercial	L-6	3	4			225		225	340
1360	Movie equipment, lamphouse, to 4000 watt, incl rectifier	1 Elec	4	2			107		107	160
1365	Sound system, incl amplifier	"	1.25	6.400			340		340	510
1410	Air compressor, to 5 H.P.	2 Clob	2.50	6.400	▼		235		235	360
1412	Lubrication equipment, automotive, 3 reel type, incl pump, excl piping	L-4	1	24	Set		1,025		1,025	1,600
1414	Bath, spray paint, complete, to 26' long	"	.80	30	"		1,300		1,300	2,000
1560	Parking equipment, cashier booth	B-22	2	15	Ea.		640	105	745	1,100
1600	Loading dock equipment, dock bumpers, rubber	1 Clob	50	.160	"		5.85		5.85	9.05
1610	Door seal for door perimeter	"	50	.160	L.F.		5.85		5.85	9.05
1620	Platform lifter, fixed, 6' x 8', 5000 lb. capacity	E-16	1.50	10.667	Ea.		555	94.50	649.50	1,075
1630	Dock leveller	"	2	8			415	71	486	815
1640	Lights, single or double arm	1 Elec	8	1			53.50		53.50	80
1650	Shelter, fabric, truck or train	1 Clob	1.50	5.333			195		195	300
1790	Waste handling equipment, commercial compactor	L-4	2	12			515		515	800
1792	Commercial or municipal incinerator, gas	"	2	12			515		515	800
1795	Crematory, excluding building	Q-3	.25	128			7,025		7,025	10,600
1910	Detection equipment, cell door front	E-4	4	8			415	35.50	450.50	770
1912	Cell door and frame		8	4			206	17.75	223.75	385
1914	Prefab cell, 4' to 5' wide, 7' to 8' high, 7' deep		8	4			206	17.75	223.75	385
1916	Cell, bolted, single		40	.800			41.50	3.55	45.05	77
1918	Visitor cubicle	▼	4	8			415	35.50	450.50	770
2850	Hydraulic gates, canal, flap, knife, slide or sluice, to 18" diameter	L-5A	8	4			206	76	282	435
2852	19" to 36" diameter		6	5.333			274	101	375	575
2854	37" to 48" diameter		2	16			820	305	1,125	1,725
2856	49" to 60" diameter		1	32			1,650	605	2,255	3,475
2858	Over 60" diameter		.30	106			5,475	2,025	7,500	11,600
3100	Sewage pumping system, prefabricated, to 1000 GPM	C-17D	.20	420			20,100	4,125	24,225	35,700
3110	Sewage treatment, holding tank for recirc chemical water closet	1 Plum	8	1			57.50		57.50	87
3900	Wastewater treatment system, to 1500 gallons	B-21	2	14	▼		590	70	660	985

11 05 Common Work Results for Equipment

11 05 05 – Selective Equipment Demolition

11 05 05.10 Selective Demolition		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4050	Food storage equipment, walk-in refrigerator/freezer	2 Clob	64	.250	S.F.		9.15		9.15	14.15
4052	Shelving, stainless steel, 4 tier or dunnage rack	1 Clob	12	.667	Ea.		24.50		24.50	37.50
4100	Food preparation equipment, small countertop		18	.444			16.30		16.30	25
4150	Food delivery carts, heated cabinets		18	.444			16.30		16.30	25
4200	Cooking equipment, commercial range	Q-1	12	1.333			69		69	104
4250	Hood and ventilation equipment, kitchen exhaust hood, excl fire prot	1 Clob	3	2.667			97.50		97.50	151
4255	Fire protection system	Q-1	3	5.333			276		276	415
4300	Food dispensing equipment, countertop items	1 Clob	15	.533	▼		19.55		19.55	30
4310	Serving counter	"	65	.123	L.F.		4.51		4.51	6.95
4350	Ice machine, ice cube maker, flakers and storage bins, to 2000 lb./day	Q-1	1.60	10	Ea.		520		520	780
4400	Cleaning and disposal, commercial dishwasher, to 50 racks per hour	L-6	1	12			675		675	1,025
4405	To 275 racks per hour	L-4	1	24			1,025		1,025	1,600
4410	Dishwasher hood	2 Clob	5	3.200			117		117	181
4420	Garbage disposal, commercial, to 5 H.P.	L-1	8	2			111		111	167
4540	Water heater, residential, to 80 gal/day	"	5	3.200			177		177	267
4542	Water softener, automatic	2 Plum	10	1.600			92		92	139
4544	Disappearing stairway, to 15' floor height	2 Clob	6	2.667			97.50		97.50	151
4710	Darkroom equipment, light	L-7	10	2.800			124		124	190
4712	Heavy	"	1.50	18.667	▼		825		825	1,275
4720	Doors	2 Clob	3.50	4.571	Opng.		168		168	259
4830	Bowling alley, complete, incl pinsetter, scorer, counters, misc supplies	4 Clob	.40	80	Lane		2,925		2,925	4,525
4840	Health club equipment, circuit training apparatus	2 Clob	2	8	Set		293		293	450
4842	Squat racks	"	10	1.600	Ea.		58.50		58.50	90.50
4860	School equipment, basketball backstop	L-2	2	8			320		320	500
4862	Table and benches, folding, in wood, 14' long	L-4	4	6	▼		258		258	400
4864	Bleachers, telescoping, to 30 tier	F-5	120	.267	Seat		12.35		12.35	19.05
4866	Boxing ring, elevated	L-4	.20	120	Ea.		5,175		5,175	8,000
4867	Boxing ring, floor level	"	2	12			515		515	800
4868	Exercise equipment	1 Clob	6	1.333			49		49	75.50
4870	Gym divider	L-4	1000	.024	S.F.		1.03		1.03	1.60
4875	Scoreboard	R-3	2	10	Ea.		530	70	600	870
4880	Shooting range, incl bullet traps, targets, excl structure	L-9	1	36	Point		1,500		1,500	2,400
5200	Vacational shop equipment	2 Clob	8	2	Ea.		73.50		73.50	113
6200	Fume hood, incl countertop, excl HVAC	"	6	2.667	L.F.		97.50		97.50	151
7100	Medical sterilizing, distiller, water, steam heated, 50 gal. capacity	1 Plum	2.80	2.857	Ea.		164		164	248
7200	Medical equipment, surgery table, minor	1 Clob	1	8			293		293	450
7210	Surgical lights, doctors office, single or double arm	2 Elec	3	5.333			285		285	425
7300	Physical therapy, table	2 Clob	4	4			147		147	226
7310	Whirlpool bath, fixed, incl mixing valves	1 Plum	4	2			115		115	174
7400	Dental equipment, chair, electric or hydraulic	1 Clob	.75	10.667			390		390	605
7410	Central suction system	1 Plum	2	4			230		230	350
7420	Drill console with accessories	1 Clob	3.20	2.500			91.50		91.50	141
7430	X-ray unit	"	4	2			73.50		73.50	113
7440	X-ray developer	1 Plum	10	.800			46		46	69.50

11 05 10 – Equipment Installation

11 05 10.10 Industrial Equipment Installation

0010	INDUSTRIAL EQUIPMENT INSTALLATION									
0020	Industrial equipment, minimum	E-2	12	4.667	Ton		234	127	361	540
0200	Maximum	"	2	28	"		1,400	765	2,165	3,225

11 11 Vehicle Service Equipment

11 11 13 – Compressed-Air Vehicle Service Equipment

11 11 13.10 Compressed Air Equipment		Daily	Labor-			2014 Bare Costs			Total
		Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
0010	COMPRESSED AIR EQUIPMENT								
0030	Compressors, electric, 1-1/2 H.P., standard controls	L-4	1.50	16	Eo.	450	690		1,140
0550	Dual controls		1.50	16		800	690		1,490
0600	5 H.P., 115/230 volt, standard controls		1	24		2,550	1,025		3,575
0650	Dual controls	▼	1	24	▼	3,100	1,025		4,125

11 11 19 – Vehicle Lubrication Equipment

11 11 19.10 Lubrication Equipment

0010	LUBRICATION EQUIPMENT								
3000	Lube equipment, 3 reel type, with pumps, not including piping	L-4	.50	48	Set	8,700	2,075		10,775
3100	Hose reel, including hose, oil/lube, 1000 PSI	2 Sswk	2	8	Eo.	730	410		1,140
3200	Grease, 5000 PSI		2	8		790	410		1,200
3300	Air, 50 feet, 160 PSI		2	8		865	410		1,275
3350	25 feet, 160 PSI	▼	2	8	▼	520	410		930

11 11 33 – Vehicle Spray Painting Equipment

11 11 33.10 Spray Painting Equipment

0010	SPRAY PAINTING EQUIPMENT								
4000	Spray painting booth, 26' long, complete	L-4	.40	60	Eo.	16,200	2,575		18,775

11 12 Parking Control Equipment

11 12 13 – Parking Key and Card Control Units

11 12 13.10 Parking Control Units

0010	PARKING CONTROL UNITS								
5100	Cord reader	1 Elec	2	4	Eo.	1,925	213		2,138
5120	Proximity with customer display	2 Elec	1	16		5,500	855		6,355
6000	Parking control software, minimum	1 Elec	.50	16		23,600	855		24,455
6020	Maximum	"	.20	40	▼	103,000	2,125		105,125

11 12 16 – Parking Ticket Dispensers

11 12 16.10 Ticket Dispensers

0010	TICKET DISPENSERS								
5900	Ticket splitter with time/date stamp, standard	2 Elec	2	8	Eo.	6,400	425		6,825
5920	Mog stripe encoding	"	2	8	"	18,600	425		19,025

11 12 26 – Parking Fee Collection Equipment

11 12 26.13 Parking Fee Coin Collection Equipment

0010	PARKING FEE COIN COLLECTION EQUIPMENT								
5200	Cashier booth, overage	B-22	1	30	Eo.	10,300	1,275	210	11,785
5300	Collector station, pay on foot	2 Elec	.20	80		109,500	4,275		113,775
5320	Credit card only	"	.50	32	▼	20,200	1,700		21,900

11 12 26.23 Fee Equipment

0010	FEE EQUIPMENT								
5600	Fee computer	1 Elec	1.50	5.333	Eo.	14,000	285		14,285

11 12 33 – Parking Gates

11 12 33.13 Lift Arm Parking Gates

0010	LIFT ARM PARKING GATES								
5000	Barrier gate with programmable controller	2 Elec	3	5.333	Eo.	3,350	285		3,635
5020	Industrial		3	5.333		5,000	285		5,285
5500	Exit verifier		1	16		17,400	855		18,255
5700	Full sign, 4" letters	1 Elec	2	4		1,225	213		1,438
5800	Inductive loop	2 Elec	4	4	▼	169	213		382

11 12 Parking Control Equipment

11 12 33 – Parking Gates

11 12 33.13 Lift Arm Parking Gates						Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs			Total Incl O&P
											Labor	Equipment	Total	
5950	Vehicle detector, microprocessor based					1 Elec	3	2.667	Ea.	420	142		562	680

11 13 Loading Dock Equipment

11 13 13 – Loading Dock Bumpers

11 13 13.10 Dock Bumpers

0010	DOCK BUMPERS Bolts not included									
0020	2" x 6" to 4" x 8", average	1 Carp	.30	26.667	M.B.F.	1,325	1,225		2,550	3,350
0050	Bumpers, rubber blacks 4-1/2" thick, 10" high, 14" lang		26	.308	Ea.	63	14.10		77.10	91.50
0200	24" lang		22	.364		95	16.65		111.65	130
0300	36" lang		17	.471		72.50	21.50		94	113
0500	12" high, 14" lang		25	.320		100	14.65		114.65	133
0550	24" lang		20	.400		111	18.35		129.35	151
0600	36" lang		15	.533		123	24.50		147.50	174
0800	Rubber blacks 6" thick, 10" high, 14" lang		22	.364		103	16.65		119.65	139
0850	24" lang		18	.444		121	20.50		141.50	165
0900	36" lang		13	.615		186	28		214	248
0910	20" high, 11" lang		13	.615		147	28		175	205
0920	Extruded rubber bumpers, T section, 22" x 22" x 3" thick		41	.195		64.50	8.95		73.45	85
0940	Molded rubber bumpers, 24" x 12" x 3" thick		20	.400		57	18.35		75.35	91
1000	Welded installation of above bumpers	E-14	8	1		3.74	53	17.75	74.49	117
1100	For drilled anchors, add per anchor	1 Carp	36	.222		6.70	10.20		16.90	23
1300	Steel bumpers, see Section 10 26 13.10									

11 13 16 – Loading Dock Seals and Shelters

11 13 16.10 Dock Seals and Shelters

0010	DOCK SEALS AND SHELTERS									
3600	Door seal for door perimeter, 12" x 12", vinyl covered	1 Carp	26	.308	L.F.	32	14.10		46.10	57
3900	Folding gates, see Section 10 22 16.10									
6200	Shelters, fabric, for truck or train, scissor arms, minimum	1 Carp	1	8	Ea.	1,750	365		2,115	2,500
6300	Maximum	"	.50	16	"	2,400	735		3,135	3,775

11 13 19 – Stationary Loading Dock Equipment

11 13 19.10 Dock Equipment

0010	DOCK EQUIPMENT									
2200	Dock boards, heavy duty, 60" x 60", aluminum, 5,000 lb. capacity				Ea.	1,450			1,450	1,600
2700	9,000 lb. capacity					1,600			1,600	1,750
3200	15,000 lb. capacity					1,725			1,725	1,900
4200	Platform lifter, 6' x 6', portable, 3,000 lb. capacity					9,150			9,150	10,100
4250	4,000 lb. capacity					11,300			11,300	12,400
4400	Fixed, 6' x 8', 5,000 lb. capacity	E-16	.70	22.857		9,850	1,200	203	11,253	13,100
4500	Levelers, hinged for trucks, 10 ton capacity, 6' x 8'		1.08	14.815		4,975	770	132	5,877	6,975
4650	7' x 8'		1.08	14.815		5,925	770	132	6,827	8,000
4670	Air bag power operated, 10 ton cap., 6' x 8'		1.08	14.815		5,775	770	132	6,677	7,850
4680	7' x 8'		1.08	14.815		5,800	770	132	6,702	7,875
4700	Hydraulic, 10 ton capacity, 6' x 8'		1.08	14.815		8,650	770	132	9,552	11,000
4800	7' x 8'		1.08	14.815		9,325	770	132	10,227	11,700
5800	Loading dock safety restraints, manual style		1.08	14.815		3,175	770	132	4,077	4,975
5900	Automatic style		1.08	14.815		5,325	770	132	6,227	7,350

11 13 Loading Dock Equipment

11 13 26 – Loading Dock Lights

11 13 26.10 Dock Lights

0010	DOCK LIGHTS	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
5000	Lights for loading docks, single arm, 24" long	1 Elec	3.80	2.105	Eo.	136	112		248	320
5700	Double arm, 60" long	"	3.80	2.105	"	209	112		321	400

11 14 Pedestrian Control Equipment

11 14 13 – Pedestrian Gates

11 14 13.13 Portable Posts and Railings

0010	PORTABLE POSTS AND RAILINGS									
0020	Portable for pedestrian traffic control, standard, minimum				Eo.	132			132	146
0100	Maximum					184			184	202
0300	Deluxe posts, minimum					208			208	229
0400	Maximum				▼	420			420	460
0600	Ropes for above posts, plastic covered, 1-1/2" diameter				L.F.	17.05			17.05	18.75
0700	Chain core				"	11.50			11.50	12.65
1500	Portable security or safety barrier, black with 7' yellow strip				Eo.	210			210	231
1510	12' yellow strip					235			235	258
1550	Sign holder, standard design					75			75	82.50

11 14 13.19 Turnstiles

0010	TURNSTILES									
0020	One way, 4 arm, 46" diameter, economy, manual	2 Corp	5	3.200	Eo.	1,675	147		1,822	2,075
0100	Electric		1.20	13.333		2,025	610		2,635	3,200
0300	High security, galv., 5'-5" diameter, 7' high, manual		1	16		5,800	735		6,535	7,525
0350	Electric		.60	26.667		8,125	1,225		9,350	10,800
0420	Three arm, 24" opening, light duty, manual		2	8		3,375	365		3,740	4,300
0450	Heavy duty		1.50	10.667		4,950	490		5,440	6,175
0460	Manual, with registering & controls, light duty		2	8		3,725	365		4,090	4,675
0470	Heavy duty		1.50	10.667		4,050	490		4,540	5,200
0480	Electric, heavy duty		1.10	14.545		4,725	665		5,390	6,225
0500	For coin or token operating, add					700			700	770
1200	One way gate with horizontal bars, 5'-5" diameter									
1300	7' high, recreation or transit type	2 Corp	.80	20	Eo.	5,300	915		6,215	7,250
1500	For electronic counter, add				"	208			208	229

11 16 Vault Equipment

11 16 16 – Safes

11 16 16.10 Commercial Safes

0010	COMMERCIAL SAFES									
0200	Office, 1 hr. rating, 30" x 18" x 18"				Eo.	2,275			2,275	2,500
0250	40" x 18" x 18"					4,850			4,850	5,325
0300	60" x 36" x 18", double door					7,350			7,350	8,075
0600	Data, 1 hr. rating, 27" x 19" x 16"					4,550			4,550	5,000
0700	63" x 34" x 16"					14,400			14,400	15,900
0750	Diskette, 1 hr., 14" x 12" x 11", inside					4,025			4,025	4,425
0800	Money, "B" label, 9" x 14" x 14"					540			540	595
0900	Tool resistive, 24" x 24" x 20"					4,125			4,125	4,525
1050	Tool and torch resistive, 24" x 24" x 20"					7,850			7,850	8,625
1150	Jewelers, 23" x 20" x 18"					8,725			8,725	9,600
1200	63" x 25" x 18"					14,300			14,300	15,700

11 16 Vault Equipment

11 16 16 – Safes

11 16 16.10 Commercial Safes		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1300	Far handling into building, odd, minimum	A-2	8.50	2.824	Eo.		103	32	135	194
1400	Maximum	"	.78	30.769	▼		1,125	345	1,470	2,100

11 17 Teller and Service Equipment

11 17 13 – Teller Equipment Systems

11 17 13.10 Bank Equipment

0010 BANK EQUIPMENT										
0020	Alarm system, police	2 Elec	1.60	10	Eo.	4,900	535		5,435	6,200
0100	With vault alarm	"	.40	40		19,500	2,125		21,625	24,600
0400	Bullet resistant teller window, 44" x 60"	1 Gloz	.60	13.333		3,800	585		4,385	5,100
0500	48" x 60"	"	.60	13.333	▼	5,525	585		6,110	6,975
3000	Counters for banks, frontal only	2 Corp	1	16	Stotion	1,825	735		2,560	3,150
3100	Complete with steel undercounter	"	.50	32	"	3,575	1,475		5,050	6,200
4600	Door and frame, bullet-resistant, with vision panel, minimum	2 Sswk	1.10	14.545	Ea.	5,500	745		6,245	7,350
4700	Maximum		1.10	14.545		7,475	745		8,220	9,500
4800	Drive-up window, drawer & mike, nat incl. gloss, minimum		1	16		6,825	820		7,645	8,950
4900	Maximum		.50	32		9,100	1,625		10,725	12,900
5000	Night depositary, with chest, minimum		1	16		7,450	820		8,270	9,650
5100	Maximum		.50	32		10,600	1,625		12,225	14,600
5200	Package receiver, pointed		3.20	5		1,375	256		1,631	1,950
5300	Stainless steel	▼	3.20	5	▼	2,325	256		2,581	3,000
5400	Partitions, bullet-resistant, 1-3/16" gloss, 8' high	2 Corp	10	1.600	L.F.	198	73.50		271.50	330
5450	Acrylic	"	10	1.600	"	375	73.50		448.50	530
5500	Pneumatic tube systems, 2 lone drive-up, complete	L-3	.25	64	Total	25,800	3,200		29,000	33,300
5550	With T.V. viewer	"	.20	80	"	50,000	4,000		54,000	61,000
5570	Safety deposit boxes, minimum	1 Sswk	44	.182	Opng.	57.50	9.30		66.80	79.50
5580	Maximum, 10" x 15" opening		19	.421		122	21.50		143.50	172
5590	Teller locker, overage	▼	15	.533	▼	1,575	27.50		1,602.50	1,775
5600	Poss thru, bullet-res. window, pointed steel, 24" x 36"	2 Sswk	1.60	10	Eo.	2,625	510		3,135	3,800
5700	48" x 48"		1.20	13.333		2,675	680		3,355	4,125
5800	72" x 40"		.80	20		4,200	1,025		5,225	6,425
5900	For stainless steel frames, add					20%				
6100	Surveillance system, video camera, complete	2 Elec	1	16	Ea.	9,500	855		10,355	11,700
6110	For each additional camera, add				"	990			990	1,100
6120	CCTV system, see Section 27 41 19.10									
6200	Twenty-four hour teller, single unit,									
6300	automated deposit, cash and memo	L-3	.25	64	Eo.	44,300	3,200		47,500	53,500
7000	Vault front, see Section 08 34 59.10									

11 19 Detention Equipment

11 19 30 – Detention Cell Equipment

11 19 30.10 Cell Equipment

0010 CELL EQUIPMENT										
3000	Toilet apparatus including wash basin, overage	L-8	1.50	13.333	Eo.	3,350	645		3,995	4,675

11 21 Mercantile and Service Equipment

11 21 13 – Cash Registers and Checking Equipment

11 21 13.10 Checkout Counter		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	CHECKOUT COUNTER									
0020	Supermarket conveyer, single belt	2 Clab	10	1.600	Ea.	3,125	58.50		3,183.50	3,550
0100	Double belt, power take-away		9	1.778		4,525	65		4,590	5,075
0400	Double belt, power take-away, incl. side scanning		7	2.286		5,300	84		5,384	5,950
0800	Warehouse or bulk type	▼	6	2.667	▼	6,275	97.50		6,372.50	7,050
1000	Scanning system, 2 lanes, w/registers, scan gun & memory				System	16,400			16,400	18,100
1100	10 lanes, single processor, full scan, with scales				"	156,000			156,000	171,500
2000	Register, restaurant, minimum				Ea.	730			730	805
2100	Maximum					3,075			3,075	3,400
2150	Store, minimum					730			730	805
2200	Maximum					3,075			3,075	3,400

11 21 53 – Barber and Beauty Shop Equipment

11 21 53.10 Barber Equipment										
0010	BARBER EQUIPMENT									
0020	Chair, hydraulic, movable, minimum	1 Carp	24	.333	Ea.	555	15.30		570.30	635
0050	Maximum	"	16	.500		3,425	23		3,448	3,800
0200	Wall hung styling station with mirrors, minimum	L-2	8	2		455	80.50		535.50	625
0300	Maximum	"	4	4		2,300	161		2,461	2,775
0500	Sink, hair washing basin, rough plumbing not incl.	1 Plum	8	1		490	57.50		547.50	625
1000	Sterilizer, liquid solution for tools					159			159	175
1100	Total equipment, rule of thumb, per chair, minimum	L-8	1	20		1,900	965		2,865	3,575
1150	Maximum	"	1	20		5,100	965		6,065	7,075

11 23 Commercial Laundry and Dry Cleaning Equipment

11 23 13 – Dry Cleaning Equipment

11 23 13.13 Dry Cleaners										
0010	DRY CLEANERS Not incl. rough-in									
2000	Dry cleaners, electric, 20 lb. capacity	L-1	.20	80	Ea.	33,300	4,425		37,725	43,300
2050	25 lb. capacity		.17	94.118		48,000	5,225		53,225	61,000
2100	30 lb. capacity		.15	106		50,500	5,925		56,425	64,500
2150	60 lb. capacity	▼	.09	177	▼	78,000	9,850		87,850	101,000

11 23 16 – Drying and Conditioning Equipment

11 23 16.13 Dryers										
0010	DRYERS, Not including rough-in									
1500	Industrial, 30 lb. capacity	1 Plum	2	4	Ea.	3,125	230		3,355	3,800
1600	50 lb. capacity	"	1.70	4.706		3,350	271		3,621	4,100
4700	Lint collector, ductwork not included, 8,000 to 10,000 CFM	Q-10	.30	80		9,100	4,075		13,175	16,300

11 23 19 – Finishing Equipment

11 23 19.13 Folders and Spreaders										
0010	FOLDERS AND SPREADERS									
3500	Folders, blankets & sheets, minimum	1 Elec	.17	47.059	Ea.	32,700	2,500		35,200	39,800
3700	King size with automatic stacker		.10	80		59,000	4,275		63,275	71,500
3800	For conveyer delivery, add		.45	17.778		14,300	950		15,250	17,200
4900	Spreader feeders, 240V, 2 station	L-6	.70	17.143		55,500	965		56,465	62,500
4920	4 station	"	.35	34.286	▼	67,500	1,925		69,425	77,000

11 23 Commercial Laundry and Dry Cleaning Equipment

11 23 23 – Commercial Ironing Equipment

11 23 23.13 Irons and Pressers		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs Labar Equipment	Total	Total Incl O&P
0010	IRONS AND PRESSERS								
4500	Ironers, institutional, 110", single roll	1 Elec	.20	40	Eo.	31,700	2,125	33,825	38,100
4800	Pressers, low copocity oir operated	L-6	1.75	6.857		9,525	385	9,910	11,100
4820	Hond operated		1.75	6.857		8,800	385	9,185	10,300
4840	Ironer 48", 240V		3.50	3.429		113,500	193	113,693	125,500
6600	Hond operated presser		.70	17.143		6,100	965	7,065	8,175
6620	Mushroom press 115 V		.70	17.143		7,600	965	8,565	9,825

11 23 26 – Commercial Washers and Extractors

11 23 26.13 Washers and Extractors

0010	WASHERS AND EXTRACTORS , not including rough-in								
6000	Combination washer/extractor, 20 lb. copocity	L-6	1.50	8	Eo.	5,875	450	6,325	7,125
6100	30 lb. copocity		.80	15		9,150	840	9,990	11,400
6200	50 lb. copocity		.68	17.647		10,700	990	11,690	13,300
6300	75 lb. copocity		.30	40		20,200	2,250	22,450	25,600
6350	125 lb. copocity		.16	75		27,300	4,200	31,500	36,500
6380	Washer extractor/dryer, 110 lb., 240V		1	12		8,775	675	9,450	10,700
6400	Washer extractor, 135 lb., 240V		1	12		25,600	675	26,275	29,100
6450	Poss through		1	12		69,000	675	69,675	77,000
6500	200 lb. washer extractor		1	12		71,000	675	71,675	79,000
6550	Poss through		1	12		74,500	675	75,175	83,000
6600	Extractor, low copocity		1.75	6.857		7,275	385	7,660	8,575

11 23 33 – Coin-Operated Laundry Equipment

11 23 33.13 Coin Operated Washers and Dryers

0010	COIN OPERATED WASHERS AND DRYERS								
0990	Dryer, gos fired								
1000	Commercial, 30 lb. copocity, coin operated, single	1 Plum	3	2.667	Eo.	3,250	153	3,403	3,800
1100	Double stocked	"	2	4		7,200	230	7,430	8,275
4860	Coin dry cleoner 20 lb.	L-6	1.75	6.857		28,500	385	28,885	31,900
5290	Clothes washer								
5300	Commercial, coin operated, overoge	1 Plum	3	2.667	Eo.	1,250	153	1,403	1,600

11 24 Maintenance Equipment

11 24 19 – Vacuum Cleaning Systems

11 24 19.10 Vacuum Cleaning

0010	VACUUM CLEANING								
0020	Centrol, 3 inlet, residential	1 Skwk	.90	8.889	Total	1,050	420	1,470	1,825
0200	Commercial		.70	11.429		1,225	540	1,765	2,150
0400	5 inlet system, residential		.50	16		1,475	755	2,230	2,800
0600	7 inlet system, commercial		.40	20		1,675	945	2,620	3,325
0800	9 inlet system, residential		.30	26.667		3,700	1,250	4,950	6,025
4010	Rule of thumb: First 1200 S.F., installed							1,425	1,575
4020	For each odditional S.F., odd				S.F.				.26

11 26 Unit Kitchens

11 26 13 – Metal Unit Kitchens

11 26 13.10 Commercial Unit Kitchens

0010 COMMERCIAL UNIT KITCHENS

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1500	Combination range, refrigerator and sink, 30" wide, minimum	L-1	2	8	Eq.	1,100	445		1,545	1,875
1550	Maximum		1	16		1,450	885		2,335	2,925
1570	60" wide, average		1.40	11.429		1,525	635		2,160	2,625
1590	72" wide, average		1.20	13.333		1,600	740		2,340	2,850
1600	Office model, 48" wide		2	8		2,000	445		2,445	2,875
1620	Refrigerator and sink only	▼	2.40	6.667	▼	2,500	370		2,870	3,300
1640	Combination range, refrigerator, sink, microwave									
1660	Oven and ice maker	L-1	.80	20	Eq.	4,500	1,100		5,600	6,625

11 27 Photographic Processing Equipment

11 27 13 – Darkroom Processing Equipment

11 27 13.10 Darkroom Equipment

0010 DARKROOM EQUIPMENT

0020	Developing sink, 5" deep, 24" x 48"	Q-1	2	8	Eq.	4,100	415		4,515	5,150
0050	48" x 52"		1.70	9.412		4,375	490		4,865	5,550
0200	10" deep, 24" x 48"		1.70	9.412		1,525	490		2,015	2,400
0250	24" x 108"	▼	1.50	10.667		3,625	555		4,180	4,800
0500	Dryers, dehumidified filtered air, 36" x 25" x 68" high	L-7	6	4.667		4,250	207		4,457	5,000
0550	48" x 25" x 68" high		5	5.600		10,000	248		10,248	11,400
2000	Processors, automatic, color print, minimum		4	7		15,700	310		16,010	17,800
2050	Maximum		.60	46.667		24,700	2,075		26,775	30,400
2300	Block and white print, minimum		2	14		11,900	620		12,520	14,100
2350	Maximum		.80	35		61,500	1,550		63,050	70,000
2600	Manual processor, 16" x 20" maximum print size		2	14		9,450	620		10,070	11,400
2650	20" x 24" maximum print size		1	28		8,975	1,250		10,225	11,800
3000	Viewing lights, 20" x 24"		6	4.667		285	207		492	630
3100	20" x 24" with color correction	▼	6	4.667		340	207		547	690
3500	Washers, round, minimum sheet 11" x 14"	Q-1	2	8		3,225	415		3,640	4,175
3550	Maximum sheet 20" x 24"		1	16		3,575	830		4,405	5,175
3800	Square, minimum sheet 20" x 24"		1	16		3,125	830		3,955	4,675
3900	Maximum sheet 50" x 56"	▼	.80	20		4,850	1,025		5,875	6,900
4500	Combination tank sink, tray sink, washers, with									
4510	Dry side tables, average	Q-1	.45	35.556	Eq.	10,600	1,850		12,450	14,500

11 31 Residential Appliances

11 31 13 – Residential Kitchen Appliances

11 31 13.13 Cooking Equipment

0010 COOKING EQUIPMENT

0020	Cooking range, 30" free standing, 1 oven, minimum	2 Clob	10	1.600	Eq.	435	58.50		493.50	570
0050	Maximum		4	4		2,000	147		2,147	2,425
0150	2 oven, minimum		10	1.600		1,200	58.50		1,258.50	1,425
0200	Maximum	▼	10	1.600		2,525	58.50		2,583.50	2,875
0350	Built-in, 30" wide, 1 oven, minimum	1 Elec	6	1.333		675	71		746	845
0400	Maximum	2 Corp	2	8		1,350	365		1,715	2,050
0500	2 oven, conventional, minimum		4	4		1,300	183		1,483	1,700
0550	1 conventional, 1 microwave, maximum		2	8		1,775	365		2,140	2,525
0700	Free-standing, 1 oven, 21" wide range, minimum	2 Clob	10	1.600		450	58.50		508.50	585
0750	21" wide, maximum	"	4	4		445	147		592	715

11 31 Residential Appliances

11 31 13 – Residential Kitchen Appliances

11 31 13.13 Cooking Equipment

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0900	Countertop cooktops, 4 burner, standard, minimum	1 Elec	6	1.333	Ea.	293	71		364	425
0950	Maximum		3	2.667		1,300	142		1,442	1,650
1050	As above, but with grill and griddle attachment, minimum		6	1.333		1,225	71		1,296	1,450
1100	Maximum		3	2.667		3,650	142		3,792	4,250
1200	Induction cooktop, 30" wide		3	2.667		1,175	142		1,317	1,525
1250	Microwave oven, minimum		4	2		119	107		226	291
1300	Maximum		2	4		460	213		673	825

11 31 13.23 Refrigeration Equipment

0010	REFRIGERATION EQUIPMENT									
2000	Deep freeze, 15 to 23 C.F., minimum	2 Clob	10	1.600	Ea.	605	58.50		663.50	755
2050	Maximum		5	3.200		810	117		927	1,075
2200	30 C.F., minimum		8	2		695	73.50		768.50	880
2250	Maximum	▼	3	5.333		900	195		1,095	1,300
5200	Icemaker, automatic, 20 lb. per day	1 Plum	7	1.143		885	66		951	1,075
5350	51 lb. per day	"	2	4		1,575	230		1,805	2,075
5500	Refrigerator, no frost, 10 C.F. to 12 C.F., minimum	2 Clob	10	1.600		420	58.50		478.50	550
5600	Maximum		6	2.667		445	97.50		542.50	635
5750	14 C.F. to 16 C.F., minimum		9	1.778		500	65		565	650
5800	Maximum		5	3.200		615	117		732	855
5950	18 C.F. to 20 C.F., minimum		8	2		620	73.50		693.50	800
6000	Maximum		4	4		1,400	147		1,547	1,775
6150	21 C.F. to 29 C.F., minimum		7	2.286		955	84		1,039	1,175
6200	Maximum	▼	3	5.333		3,325	195		3,520	3,975
6790	Energy-star qualified, 18 C.F., minimum	G 2 Corp	4	4		505	183		688	840
6795	Maximum	G	2	8		1,150	365		1,515	1,850
6797	21.7 C.F., minimum	G	4	4		1,025	183		1,208	1,400
6799	Maximum	G	4	4		2,075	183		2,258	2,575

11 31 13.33 Kitchen Cleaning Equipment

0010	KITCHEN CLEANING EQUIPMENT									
2750	Dishwasher, built-in, 2 cycles, minimum	L-1	4	4	Ea.	235	222		457	595
2800	Maximum		2	8		430	445		875	1,125
2950	4 or more cycles, minimum		4	4		370	222		592	745
2960	Average		4	4		495	222		717	880
3000	Maximum		2	8		1,075	445		1,520	1,875
3100	Energy-star qualified, minimum	G	4	4		365	222		587	735
3110	Maximum	G	2	8		1,500	445		1,945	2,325

11 31 13.43 Waste Disposal Equipment

0010	WASTE DISPOSAL EQUIPMENT									
1750	Compactor, residential size, 4 to 1 compaction, minimum	1 Corp	5	1.600	Ea.	640	73.50		713.50	820
1800	Maximum	"	3	2.667		1,000	122		1,122	1,300
3300	Garbage disposal, sink type, minimum	L-1	10	1.600		86.50	88.50		175	228
3350	Maximum	"	10	1.600		217	88.50		305.50	370

11 31 13.53 Kitchen Ventilation Equipment

0010	KITCHEN VENTILATION EQUIPMENT									
4150	hood for range, 2 speed, vented, 30" wide, minimum	L-3	5	3.200	Ea.	69.50	160		229.50	320
4200	Maximum		3	5.333		770	266		1,036	1,250
4300	42" wide, minimum		5	3.200		166	160		326	425
4330	Custom	▼	5	3.200		1,650	160		1,810	2,050
4350	Maximum	▼	3	5.333		2,000	266		2,266	2,600
4500	For ventless hood, 2 speed, add					18.45			18.45	20.50
4650	For vented 1 speed, deduct from maximum					49.50			49.50	54.50

11 31 Residential Appliances

11 31 23 – Residential Laundry Appliances

11 31 23.13 Washers

			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WASHERS										
5000	Residential, 4 cycle, average		1 Plum	3	2.667	Ea.	865	153		1,018	1,175
6650	Washing machine, automatic, minimum			3	2.667		480	153		633	755
6700	Maximum			1	8		1,500	460		1,960	2,350
6750	Energy star qualified, front loading, minimum	G		3	2.667		645	153		798	940
6760	Maximum	G		1	8		1,575	460		2,035	2,425
6764	Top loading, minimum	G		3	2.667		445	153		598	720
6766	Maximum	G		3	2.667		1,225	153		1,378	1,575

11 31 23.23 Dryers

0010	DRYERS										
0500	Gas fired residential, 16 lb. capacity, average		1 Plum	3	2.667	Ea.	665	153		818	965
6770	Electric, front loading, energy-star qualified, minimum	G	L-2	3	5.333		380	215		595	750
6780	Maximum	G	"	2	8		1,900	320		2,220	2,575
7450	Vent kits for dryers		1 Carp	10	.800		38.50	36.50		75	98.50

11 31 33 – Miscellaneous Residential Appliances

11 31 33.13 Sump Pumps

0010	SUMP PUMPS										
6400	Cellar drainer, pedestal, 1/3 H.P., molded PVC base		1 Plum	3	2.667	Ea.	135	153		288	380
6450	Solid brass		"	2	4	"	289	230		519	670
6460	Sump pump, see also Section 22 14 29.16										

11 31 33.23 Water Heaters

0010	WATER HEATERS										
6900	Electric, glass lined, 30 gallon, minimum		L-1	5	3.200	Ea.	430	177		607	735
6950	Maximum			3	5.333		595	296		891	1,100
7100	80 gallon, minimum			2	8		1,225	445		1,670	2,025
7150	Maximum			1	16		1,700	885		2,585	3,175
7180	Gas, glass lined, 30 gallon, minimum		2 Plum	5	3.200		805	184		989	1,175
7220	Maximum			3	5.333		1,125	305		1,430	1,700
7260	50 gallon, minimum			2.50	6.400		845	370		1,215	1,475
7300	Maximum			1.50	10.667		1,175	615		1,790	2,200
7310	Water heater, see also Section 22 33 30.13										

11 31 33.43 Air Quality

0010	AIR QUALITY										
2450	Dehumidifier, portable, automatic, 15 pint		1 Elec	4	2	Ea.	150	107		257	325
2550	40 pint						207			207	228
3550	Heater, electric, built-in, 1250 watt, ceiling type, minimum		1 Elec	4	2		106	107		213	276
3600	Maximum			3	2.667		172	142		314	405
3700	Wall type, minimum			4	2		170	107		277	345
3750	Maximum			3	2.667		183	142		325	415
3900	1500 watt wall type, with blower			4	2		170	107		277	345
3950	3000 watt			3	2.667		350	142		492	600
4850	Humidifier, portable, 8 gallons per day						131			131	144
5000	15 gallons per day						208			208	229

11 33 Retractable Stairs

11 33 10 – Disappearing Stairs

11 33 10.10 Disappearing Stairway		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	DISAPPEARING STAIRWAY No trim included									
0100	Custom grade, pine, 8'-6" ceiling, minimum	1 Carp	4	2	Ea.	175	91.50		266.50	335
0150	Average		3.50	2.286		250	105		355	435
0200	Maximum		3	2.667		320	122		442	545
0500	Heavy duty, pivoted, from 7'-7" to 12'-10" floor to floor		3	2.667		735	122		857	995
0600	16'-0" ceiling		2	4		1,500	183		1,683	1,925
0800	Economy folding, pine, 8'-6" ceiling		4	2		174	91.50		265.50	335
0900	9'-6" ceiling		4	2		194	91.50		285.50	355
1100	Automatic electric, aluminum, floor to floor height, 8' to 9'	2 Carp	1	16		8,425	735		9,160	10,400
1400	11' to 12'		.90	17.778		8,975	815		9,790	11,100
1700	14' to 15'		.70	22.857		9,675	1,050		10,725	12,200

11 41 Foodservice Storage Equipment

11 41 13 – Refrigerated Food Storage Cases

11 41 13.10 Refrigerated Food Cases

0010	REFRIGERATED FOOD CASES									
0030	Dairy, multi-deck, 12' long	Q-5	3	5.333	Ea.	11,200	281		11,481	12,700
0100	Far rear sliding doors, odd					1,800			1,800	1,975
0200	Delicatessen case, service deli, 12' long, single deck	Q-5	3.90	4.103		7,650	216		7,866	8,750
0300	Multi-deck, 18 S.F. shelf display		3	5.333		7,075	281		7,356	8,200
0400	Freezer, self-contained, chest-type, 30 C.F.		3.90	4.103		8,425	216		8,641	9,600
0500	Glass door, upright, 78 C.F.		3.30	4.848		10,100	255		10,355	11,500
0600	Frozen food, chest type, 12' long		3.30	4.848		8,125	255		8,380	9,300
0700	Glass door, reach-in, 5 door		3	5.333		13,900	281		14,181	15,700
0800	Island case, 12' long, single deck		3.30	4.848		7,200	255		7,455	8,300
0900	Multi-deck		3	5.333		8,400	281		8,681	9,675
1000	Meat case, 12' long, single deck		3.30	4.848		7,200	255		7,455	8,300
1050	Multi-deck		3.10	5.161		10,300	272		10,572	11,700
1100	Produce, 12' long, single deck		3.30	4.848		6,775	255		7,030	7,825
1200	Multi-deck		3.10	5.161		8,625	272		8,897	9,875

11 41 13.20 Refrigerated Food Storage Equipment

0010	REFRIGERATED FOOD STORAGE EQUIPMENT									
2350	Cooler, reach-in, beverage, 6' long	Q-1	6	2.667	Ea.	3,550	138		3,688	4,100
4300	Freezers, reach-in, 44 C.F.		4	4		4,350	207		4,557	5,125
4500	68 C.F.		3	5.333		4,775	276		5,051	5,675
4600	Freezer, pre-fab, 8' x 8' w/refrigeration	2 Carp	.45	35.556		10,900	1,625		12,525	14,500
4620	8' x 12'		.35	45.714		11,000	2,100		13,100	15,300
4640	8' x 16'		.25	64		14,900	2,925		17,825	20,900
4660	8' x 20'		.17	94.118		19,200	4,325		23,525	27,800
4680	Reach-in, 1 compartment	Q-1	4	4		2,475	207		2,682	3,050
4685	Energy star rated	G R-18	7.80	3.333		2,550	140		2,690	3,025
4700	2 compartment	Q-1	3	5.333		4,050	276		4,326	4,900
4705	Energy star rated	G R-18	6.20	4.194		3,075	176		3,251	3,650
4710	3 compartment	Q-1	3	5.333		5,225	276		5,501	6,175
4715	Energy star rated	G R-18	5.60	4.643		3,850	194		4,044	4,525
8320	Refrigerator, reach-in, 1 compartment		7.80	3.333		2,400	140		2,540	2,850
8325	Energy star rated	G	7.80	3.333		2,550	140		2,690	3,025
8330	2 compartment		6.20	4.194		3,750	176		3,926	4,400
8335	Energy star rated	G	6.20	4.194		3,075	176		3,251	3,650
8340	3 compartment		5.60	4.643		4,700	194		4,894	5,475
8345	Energy star rated	G	5.60	4.643		3,850	194		4,044	4,525

11 41 Foodservice Storage Equipment

11 41 13 – Refrigerated Food Storage Cases

11 41 13.20 Refrigerated Food Storage Equipment		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8350	Pre-fab, with refrigeration, 8' x 8'	2 Corp	.45	35.556	Ea.	6,975	1,625		8,600	10,200
8360	8' x 12'		.35	45.714		7,900	2,100		10,000	11,900
8370	8' x 16'		.25	64		12,200	2,925		15,125	17,900
8380	8' x 20'	▼	.17	94.118		15,500	4,325		19,825	23,700
8390	Pass-thru/roll-in, 1 compartment	R-18	7.80	3.333		4,450	140		4,590	5,125
8400	2 compartment		6.24	4.167		6,250	175		6,425	7,150
8410	3 compartment		5.60	4.643		8,525	194		8,719	9,675
8420	Walk-in, alum, door & floor only, no refig, 6' x 6' x 7'-6"	2 Corp	1.40	11.429		8,675	525		9,200	10,400
8430	10' x 6' x 7'-6"		.55	29.091		12,500	1,325		13,825	15,900
8440	12' x 14' x 7'-6"		.25	64		17,300	2,925		20,225	23,500
8450	12' x 20' x 7'-6"	▼	.17	94.118		19,100	4,325		23,425	27,700
8460	Refrigerated cabinets, mobile					3,875			3,875	4,275
8470	Refrigerator/freezer, reach-in, 1 compartment	R-18	5.60	4.643		5,725	194		5,919	6,600
8480	2 compartment	"	4.80	5.417		7,475	227		7,702	8,575

11 41 13.30 Wine Cellar

0010	WINE CELLAR , refrigerated, Redwood interior, carpeted, walk-in type									
0020	6'-8" high, including racks									
0200	80" W x 48" D for 900 bottles	2 Corp	1.50	10.667	Ea.	4,250	490		4,740	5,425
0250	80" W x 72" D for 1300 bottles		1.33	12.030		5,175	550		5,725	6,550
0300	80" W x 94" D for 1900 bottles		1.17	13.675		6,275	625		6,900	7,875
0400	80" W x 124" D for 2500 bottles	▼	1	16	▼	7,375	735		8,110	9,225
0600	Portable cabinets, red oak, reach-in temp. & humidity controlled									
0650	26-5/8"W x 26-1/2"D x 68"H for 235 bottles				Ea.	3,525			3,525	3,875
0660	32"W x 21-1/2"D x 73-1/2"H for 144 bottles					2,875			2,875	3,150
0670	32"W x 29-1/2"D x 73-1/2"H for 288 bottles					3,825			3,825	4,225
0680	39-1/2"W x 29-1/2"D x 86-1/2"H for 440 bottles					4,050			4,050	4,450
0690	52-1/2"W x 29-1/2"D x 73-1/2"H for 468 bottles					4,325			4,325	4,775
0700	52-1/2"W x 29-1/2"D x 86-1/2"H for 572 bottles				▼	4,425			4,425	4,875
0730	Portable, red oak, can be built-in with glass door									
0750	23-7/8"W x 24"D x 34-1/2"H for 50 bottles				Ea.	930			930	1,025

11 41 33 – Foodservice Shelving

11 41 33.20 Metal Food Storage Shelving

0010	METAL FOOD STORAGE SHELVING									
8600	Stainless steel shelving, louvered 4-tier, 20" x 3'	1 Clab	6	1.333	Ea.	1,400	49		1,449	1,600
8605	20" x 4'		6	1.333		1,525	49		1,574	1,750
8610	20" x 6'		6	1.333		2,175	49		2,224	2,475
8615	24" x 3'		6	1.333		1,950	49		1,999	2,225
8620	24" x 4'		6	1.333		2,325	49		2,374	2,650
8625	24" x 6'		6	1.333		3,250	49		3,299	3,625
8630	Flat 4-tier, 20" x 3'		6	1.333		1,150	49		1,199	1,325
8635	20" x 4'		6	1.333		1,400	49		1,449	1,600
8640	20" x 5'		6	1.333		1,600	49		1,649	1,850
8645	24" x 3'		6	1.333		1,250	49		1,299	1,450
8650	24" x 4'		6	1.333		2,200	49		2,249	2,475
8655	24" x 6'		6	1.333		2,650	49		2,699	2,975
8700	Galvanized shelving, louvered 4-tier, 20" x 3'		6	1.333		750	49		799	900
8705	20" x 4'		6	1.333		850	49		899	1,000
8710	20" x 6'		6	1.333		995	49		1,044	1,175
8715	24" x 3'		6	1.333		700	49		749	845
8720	24" x 4'		6	1.333		985	49		1,034	1,150
8725	24" x 6'		6	1.333		1,300	49		1,349	1,525
8730	Flat 4-tier, 20" x 3'		6	1.333		695	49		744	840

11 41 Foodservice Storage Equipment

11 41 33 – Foodservice Shelving

11 41 33.20 Metal Food Storage Shelving		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
8735	20" x 4'	1 Clob	6	1.333	Ea.	685	49		734	830
8740	20" x 6'		6	1.333		895	49		944	1,050
8745	24" x 3'		6	1.333		660	49		709	805
8750	24" x 4'		6	1.333		745	49		794	895
8755	24" x 6'		6	1.333		940	49		989	1,100
8760	Stainless steel dunnage rack, 24" x 3'		8	1		325	36.50		361.50	415
8765	24" x 4'		8	1		420	36.50		456.50	515
8770	Galvanized dunnage rack, 24" x 3'		8	1		166	36.50		202.50	240
8775	24" x 4'	▼	8	1	▼	187	36.50		223.50	263

11 42 Food Preparation Equipment

11 42 10 – Commercial Food Preparation Equipment

11 42 10.10 Choppers, Mixers and Misc. Equipment

0010	CHOPPERS, MIXERS AND MISC. EQUIPMENT									
1700	Choppers, 5 pounds	R-18	7	3.714	Ea.	2,125	156		2,281	2,575
1720	16 pounds		5	5.200		2,175	218		2,393	2,725
1740	35 to 40 pounds		4	6.500		3,500	272		3,772	4,275
1840	Coffee brewer, 5 burners	1 Plum	3	2.667		1,300	153		1,453	1,675
1850	Coffee urn, twin 6 gallon urns	▼	2	4		2,375	230		2,605	2,975
1860	Single, 3 gallon	▼	3	2.667		1,800	153		1,953	2,200
3000	Fast food equipment, total package, minimum	6 Skwk	.08	600		201,000	28,400		229,400	265,500
3100	Maximum	"	.07	685		274,000	32,400		306,400	351,500
3800	Food mixers, bench type, 20 quarts	L-7	7	4		2,925	177		3,102	3,500
3850	40 quarts		5.40	5.185		6,650	230		6,880	7,675
3900	60 quarts		5	5.600		11,200	248		11,448	12,700
4040	80 quarts		3.90	7.179		12,500	320		12,820	14,300
4100	Floor type, 20 quarts		15	1.867		3,200	82.50		3,282.50	3,625
4120	60 quarts		14	2		9,825	88.50		9,913.50	10,900
4140	80 quarts		12	2.333		15,200	103		15,303	17,000
4160	140 quarts		8.60	3.256		25,300	144		25,444	28,000
6700	Peelers, small	R-18	8	3.250		1,875	136		2,011	2,250
6720	Large	"	6	4.333		4,775	181		4,956	5,525
6800	Pulper/extractor, close coupled, 5 HP	1 Plum	1.90	4.211		3,475	242		3,717	4,200
8580	Slicer with table	R-18	9	2.889	▼	4,625	121		4,746	5,250

11 43 Food Delivery Carts and Conveyors

11 43 13 – Food Delivery Carts

11 43 13.10 Mobile Carts, Racks and Trays

0010	MOBILE CARTS, RACKS AND TRAYS									
1650	Cabinet, heated, 1 compartment, reach-in	R-18	5.60	4.643	Ea.	3,250	194		3,444	3,875
1655	Pass-thru roll-in		5.60	4.643		3,775	194		3,969	4,450
1660	2 compartment, reach-in	▼	4.80	5.417		8,925	227		9,152	10,200
1670	Mobile					3,500			3,500	3,825
6850	Mobile rack w/pan slide					1,375			1,375	1,500
9180	Tray and silver dispenser, mobile	1 Clob	16	.500	▼	905	18.35		923.35	1,025

11 44 Food Cooking Equipment

11 44 13 – Commercial Ranges

11 44 13.10 Cooking Equipment

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	COOKING EQUIPMENT									
0020	Boke oven, gas, one section	Q-1	8	2	~Eo.	5,550	104		5,654	6,250
0300	Two sections		7	2.286		8,975	118		9,093	10,100
0600	Three sections		6	2.667		12,400	138		12,538	13,800
0900	Electric convection, single deck	L-7	4	7		6,150	310		6,460	7,225
1300	Broiler, without oven, stondord	Q-1	8	2		3,500	104		3,604	4,000
1550	Infrared	L-7	4	7		7,325	310		7,635	8,550
4750	Fryer, with twin baskets, modulator model	Q-1	7	2.286		1,250	118		1,368	1,550
5000	Floor model, on 6" legs	"	5	3.200		2,400	166		2,566	2,900
5100	Extro single basket, large					98.50			98.50	108
5170	Energy stor rated, 50 lb. copacity	G R-18	4	6.500		4,575	272		4,847	5,475
5175	85 lb. copacity	G "	4	6.500		8,425	272		8,697	9,700
5300	Griddle, SS, 24" plote, w/4" legs, elec, 208 V, 3 phase, 3' long	Q-1	7	2.286		1,375	118		1,493	1,700
5550	4' long	"	6	2.667		2,225	138		2,363	2,650
6200	Iced teo brewer	1 Plum	3.44	2.326		745	134		879	1,025
6350	Kettle, w/steom jacket, tilting, w/positive lock, SS, 20 gollons	L-7	7	4		8,125	177		8,302	9,225
6600	60 gollons	"	6	4.667		10,800	207		11,007	12,200
6900	Ronge, restourant type, 6 burners ond 1 standard oven, 36" wide	Q-1	7	2.286		2,575	118		2,693	3,000
6950	Convection		7	2.286		4,400	118		4,518	5,025
7150	2 stondord ovens, 24" griddle, 60" wide		6	2.667		4,500	138		4,638	5,175
7200	1 stondord, 1 convection oven		6	2.667		9,350	138		9,488	10,500
7450	Heovy duty, single 34" stondord oven, open top		5	3.200		4,750	166		4,916	5,475
7500	Convection oven		5	3.200		5,375	166		5,541	6,175
7700	Griddle top		6	2.667		2,825	138		2,963	3,300
7750	Convection oven		6	2.667		7,700	138		7,838	8,650
7760	Induction cooker, electric	L-7	7	4		1,825	177		2,002	2,300
8850	Steomer, electric 27 KW		7	4		10,600	177		10,777	12,000
9100	Electric, 10 KW or gos 100,000 BTU		5	5.600		6,250	248		6,498	7,250
9150	Tooster, conveyor type, 16-22 slices per minute					1,075			1,075	1,175
9160	Pop-up, 2 slot					610			610	670
9200	For deluxe models of above equipment, odd					75%				
9400	Rule of thumb: Equipment cost based									
9410	on kitchen work oreo									
9420	Office buildings, minimum	L-7	77	.364	S.F.	89.50	16.10		105.60	123
9450	Maximum		58	.483		151	21.50		172.50	199
9550	Public eoting facilities, minimum		77	.364		117	16.10		133.10	154
9600	Maximum		46	.609		191	27		218	252
9750	Hospitals, minimum		58	.483		121	21.50		142.50	166
9800	Maximum		39	.718		222	32		254	293

11 46 Food Dispensing Equipment

11 46 16 – Service Line Equipment

11 46 16.10 Commercial Food Dispensing Equipment

0010	COMMERCIAL FOOD DISPENSING EQUIPMENT									
1050	Butter pot dispenser	1 Clab	13	.615	Eo.	995	22.50		1,017.50	1,125
1100	Bread dispenser, counter top		13	.615		880	22.50		902.50	1,000
1900	Cup ond gloss dispenser, drop in		4	2		1,075	73.50		1,148.50	1,300
1920	Disposable cup, drop in		16	.500		490	18.35		508.35	570
2650	Dish dispenser, drop in, 12"		11	.727		2,225	26.50		2,251.50	2,500
2660	Mobile		10	.800		2,600	29.50		2,629.50	2,900
3300	Food wormer, counter, 1.2 KW					660			660	725

11 46 Food Dispensing Equipment

11 46 16 – Service Line Equipment

11 46 16.10 Commercial Food Dispensing Equipment		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3550	1.6 KW				Eo.	2,100			2,100	2,325
3600	Well, hot food, built-in, rectangular, 12" x 20"	R-30	10	2.600		805	112		917	1,050
3610	Circular, 7 qt.		10	2.600		415	112		527	625
3620	Refrigerated, 2 compartments		10	2.600		3,025	112		3,137	3,500
3630	3 compartments		9	2.889		3,650	125		3,775	4,225
3640	4 compartments		8	3.250		4,300	141		4,441	4,950
4720	Frost cold plate	▼	9	2.889		18,200	125		18,325	20,200
5700	Hot chocolate dispenser	1 Plum	4	2		1,150	115		1,265	1,450
5750	Ice dispenser 567 pound	Q-1	6	2.667		5,150	138		5,288	5,875
6250	Jet spray dispenser	R-18	4.50	5.778		3,125	242		3,367	3,825
6300	Juice dispenser, concentrate	"	4.50	5.778		1,875	242		2,117	2,425
6690	Milk dispenser, bulk, 2 flavor	R-30	8	3.250		1,825	141		1,966	2,250
6695	3 flavor	"	8	3.250	▼	2,450	141		2,591	2,925
8800	Serving counter, straight	1 Corp	40	.200	L.F.	915	9.15		924.15	1,025
8820	Curved section	"	30	.267	"	1,125	12.25		1,137.25	1,250
8825	Solid surface, see Section 12 36 61.16									
8860	Sneeze guard with lights, 60" L	1 Clob	16	.500	Eo.	390	18.35		408.35	460
9100	Soft serve ice cream machine, medium	R-18	11	2.364		11,900	99		11,999	13,300
9110	Large	"	9	2.889		21,500	121		21,621	23,900

11 47 Ice Machines

11 47 10 – Commercial Ice Machines

11 47 10.10 Commercial Ice Equipment

0010 COMMERCIAL ICE EQUIPMENT										
5800	Ice cube maker, 50 pounds per day	Q-1	6	2.667	Eo.	1,600	138		1,738	1,950
5900	250 pounds per day		1.20	13.333		2,650	690		3,340	3,975
6050	500 pounds per day		4	4		2,750	207		2,957	3,350
6060	With bin		1.20	13.333		3,350	690		4,040	4,750
6090	1000 pounds per day, with bin		1	16		4,875	830		5,705	6,625
6100	Ice flakers, 300 pounds per day		1.60	10		2,750	520		3,270	3,800
6120	600 pounds per day		.95	16.842		3,900	870		4,770	5,600
6130	1000 pounds per day		.75	21.333		4,700	1,100		5,800	6,850
6140	2000 pounds per day		.65	24.615		21,300	1,275		22,575	25,300
6160	Ice storage bin, 500 pound capacity	Q-5	1	16		1,025	840		1,865	2,400
6180	1000 pound	"	.56	28.571		2,500	1,500		4,000	5,025

11 48 Cleaning and Disposal Equipment

11 48 13 – Commercial Dishwashers

11 48 13.10 Dishwashers

0010 DISHWASHERS										
2700	Dishwasher, commercial, rack type									
2720	10 to 12 racks per hour	Q-1	3.20	5	Eo.	3,475	259		3,734	4,225
2730	Energy stor rated, 35 to 40 racks/hour		1.30	12.308		4,650	640		5,290	6,075
2740	50 to 60 racks/hour		▼	1.30	12.308	10,100	640		10,740	12,100
2800	Automatic, 190 to 230 racks per hour	L-6	.35	34.286		13,800	1,925		15,725	18,000
2820	235 to 275 racks per hour		.25	48		31,100	2,700		33,800	38,300
2840	8,750 to 12,500 dishes per hour	▼	.10	120	▼	54,500	6,750		61,250	70,000
2950	Dishwasher hood, canopy type	L-3A	10	1.200	L.F.	855	60		915	1,025
2960	Pont leg type	"	2.50	4.800	Eo.	8,600	241		8,841	9,850

11 48 Cleaning and Disposal Equipment

11 48 13 – Commercial Dishwashers

11 48 13.10 Dishwashers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5200	Garbage disposal 1.5 HP, 100 GPH	L-1	4.80	3.333	Ea.	2,150	185		2,335	2,650
5210	3 HP, 120 GPH		4.60	3.478		2,600	193		2,793	3,150
5220	5 HP, 250 GPH	▼	4.50	3.556	▼	3,575	197		3,772	4,225
6750	Pat sink, 3 compartment	1 Plum	7.25	1.103	L.F.	970	63.50		1,033.50	1,175
6760	Pat washer, low temp wash/rinse		1.60	5	Ea.	4,000	288		4,288	4,825
6770	High pressure wash, high temperature rinse	▼	1.20	6.667		36,500	385		36,885	40,700
9170	Trash compactor, small, up to 125 lb. compacted weight	L-4	4	6		23,900	258		24,158	26,700
9175	Large, up to 175 lb. compacted weight	"	3	8		29,200	345		29,545	32,600

11 52 Audio-Visual Equipment

11 52 13 – Projection Screens

11 52 13.10 Projection Screens, Wall or Ceiling Hung

0010	PROJECTION SCREENS, WALL OR CEILING HUNG, matte white									
0100	Manually operated, economy	2 Carp	500	.032	S.F.	5.85	1.47		7.32	8.70
0300	Intermediate		450	.036		6.80	1.63		8.43	10
0400	Deluxe		400	.040		9.45	1.83		11.28	13.20
0600	Electric operated, matte white, 25 S.F., economy		5	3.200	Ea.	855	147		1,002	1,175
0700	Deluxe		4	4		1,775	183		1,958	2,225
0900	50 S.F., economy		3	5.333		695	245		940	1,150
1000	Deluxe		2	8		1,975	365		2,340	2,750
1200	Heavy duty, electric operated, 200 S.F.		1.50	10.667		3,900	490		4,390	5,050
1300	400 S.F.		1	16		4,800	735		5,535	6,425
1500	Rigid acrylic in wall, far rear projection, 1/4" thick	2 Glaz	30	.533	S.F.	47	23.50		70.50	87.50
1600	1/2" thick (maximum size 10' x 20')	"	25	.640	"	83.50	28		111.50	135

11 52 16 – Projectors

11 52 16.10 Movie Equipment

0010	MOVIE EQUIPMENT									
0020	Changeover, minimum				Ea.	465			465	510
0100	Maximum					905			905	995
0400	Film transport, incl. platters and autowind, minimum					5,025			5,025	5,525
0500	Maximum					14,300			14,300	15,700
0800	Lamphouses, incl. rectifiers, xenon, 1,000 watt	1 Elec	2	4		6,650	213		6,863	7,625
0900	1,600 watt		2	4		7,100	213		7,313	8,125
1000	2,000 watt		1.50	5.333		7,625	285		7,910	8,800
1100	4,000 watt		1.50	5.333		9,425	285		9,710	10,800
1400	Lenses, anamorphic, minimum					1,275			1,275	1,400
1500	Maximum					2,875			2,875	3,150
1800	Flat 35 mm, minimum					1,100			1,100	1,225
1900	Maximum					1,725			1,725	1,900
2200	Pedestals, for projectors					1,475			1,475	1,625
2300	Console type					10,700			10,700	11,800
2600	Projector mechanisms, incl. soundhead, 35 mm, minimum					11,100			11,100	12,200
2700	Maximum					15,200			15,200	16,700
3000	Projection screens, rigid, in wall, acrylic, 1/4" thick	2 Glaz	195	.082	S.F.	42	3.61		45.61	51.50
3100	1/2" thick	"	130	.123	"	48.50	5.40		53.90	62
3300	Electric operated, heavy duty, 400 S.F.	2 Carp	1	16	Ea.	2,950	735		3,685	4,375
3320	Theater projection screens, matte white, including frames	"	200	.080	S.F.	6.65	3.67		10.32	12.95
3400	Also see Section 11 52 13.10									
3700	Sound systems, incl. amplifier, mono, minimum	1 Elec	.90	8.889	Ea.	3,300	475		3,775	4,325
3800	Dolby/Super Sound, maximum	▼	.40	20	▼	18,100	1,075		19,175	21,500

11 52 Audio-Visual Equipment

11 52 16 – Projectors

11 52 16.10 Movie Equipment		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
4100	Dual system, 2 channel, front surround, minimum	1 Elec	.70	11.429	Eq.	4,625	610		5,235	6,025
4200	Dolby/Super Sound, 4 channel, maximum		.40	20		16,500	1,075		17,575	19,800
4500	Sound heads, 35 mm					5,300			5,300	5,825
4900	Splicer, tape system, minimum					740			740	815
5000	Tape type, maximum					1,325			1,325	1,450
5300	Speakers, recessed behind screen, minimum	1 Elec	2	4		1,050	213		1,263	1,500
5400	Maximum	"	1	8		3,100	425		3,525	4,050
5700	Seating, pointed steel, upholstered, minimum	2 Corp	35	.457		132	21		153	178
5800	Maximum	"	28	.571		420	26		446	505
6100	Rewind tables, minimum					2,650			2,650	2,900
6200	Maximum					4,725			4,725	5,175
7000	For automation, varying sophistication, minimum	1 Elec	1	8	System	2,375	425		2,800	3,275
7100	Maximum	2 Elec	.30	53.333	"	5,575	2,850		8,425	10,400

11 52 16.20 Movie Equipment- Digital

0010	MOVIE EQUIPMENT- DIGITAL									
1000	Digital 2K projection system, 98" DMD	1 Elec	2	4	Eq.	44,000	213		44,213	48,700
1100	OEM lens		2	4		5,375	213		5,588	6,225
2000	Pedestal with power distribution		2	4		2,050	213		2,263	2,575
3000	Software	▼	2	4	▼	1,725	213		1,938	2,225

11 53 Laboratory Equipment

11 53 03 – Laboratory Test Equipment

11 53 03.13 Test Equipment

0010	TEST EQUIPMENT									
1700	Thermometer, electric, portable				Eq.	490			490	540
1800	Titration unit, four 2000 ml reservoirs				"	5,500			5,500	6,050

11 53 13 – Laboratory Fume Hoods

11 53 13.13 Recirculating Laboratory Fume Hoods

0010	RECIRCULATING LABORATORY FUME HOODS									
0600	Fume hood, with countertop & base, not including HVAC									
0610	Simple, minimum	2 Corp	5.40	2.963	L.F.	495	136		631	750
0620	Complex, including fixtures		2.40	6.667		795	305		1,100	1,350
0630	Special, maximum	▼	1.70	9.412	▼	830	430		1,260	1,575
0670	Service fixtures, overage				Eq.	237			237	261
0680	For sink assembly with hot and cold water, odd	1 Plum	1.40	5.714		725	330		1,055	1,300
0750	Glove box, fiberglass, bacteriological					16,900			16,900	18,600
0760	Controlled atmosphere					19,400			19,400	21,300
0770	Radioisotope					16,900			16,900	18,600
0780	Carcinogenic					16,900			16,900	18,600

11 53 13.23 Exhaust Hoods

0010	EXHAUST HOODS									
0650	Ductwork, minimum	2 Shee	1	16	Hood	4,025	875		4,900	5,750
0660	Maximum	"	.50	32	"	6,200	1,750		7,950	9,500

11 53 16 – Laboratory Incubators

11 53 16.13 Incubators

0010	INCUBATORS									
1000	Incubators, minimum				Eq.	3,000			3,000	3,300
1010	Maximum				"	11,700			11,700	12,800

11 53 Laboratory Equipment

11 53 19 – Laboratory Sterilizers

11 53 19.13 Sterilizers		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	STERILIZERS									
0700	Glassware washer, undercounter, minimum	L-1	1.80	8.889	Ea.	6,250	495		6,745	7,625
0710	Maximum	"	1	16		13,100	885		13,985	15,700
1850	Utensil washer-sanitizer	1 Plum	2	4		11,100	230		11,330	12,600

11 53 23 – Laboratory Refrigerators

11 53 23.13 Refrigerators										
0010	REFRIGERATORS									
1200	Blood bank, 28.6 C.F. emergency signal				Ea.	9,550			9,550	10,500
1210	Reach-in, 16.9 C.F.				"	8,425			8,425	9,275

11 53 33 – Emergency Safety Appliances

11 53 33.13 Emergency Equipment										
0010	EMERGENCY EQUIPMENT									
1400	Safety equipment, eye wash, hand held				Ea.	405			405	445
1450	Deluge shower				"	760			760	840

11 53 43 – Service Fittings and Accessories

11 53 43.13 Fittings										
0010	FITTINGS									
1600	Sink, one piece plastic, flask wash, hose, free standing	1 Plum	1.60	5	Ea.	1,925	288		2,213	2,550
1610	Epoxy resin sink, 25" x 16" x 10"	"	2	4	"	218	230		448	590
1950	Utility table, acid resistant top with drawers	2 Carp	30	.533	L.F.	162	24.50		186.50	216
8000	Alternate pricing method: as percent of lab furniture									
8050	Installation, not incl. plumbing & duct work				% Furn.				22%	22%
8100	Plumbing, final connections, simple system								10%	10%
8110	Moderately complex system								15%	15%
8120	Complex system								20%	20%
8150	Electrical, simple system								10%	10%
8160	Moderately complex system								20%	20%
8170	Complex system								35%	35%

11 57 Vocational Shop Equipment

11 57 10 – Shop Equipment

11 57 10.10 Vocational School Shop Equipment										
0010	VOCATIONAL SCHOOL SHOP EQUIPMENT									
0020	Benches, work, wood, average	2 Carp	5	3.200	Ea.	630	147		777	915
0100	Metal, overage		5	3.200		545	147		692	820
0400	Combination belt & disc sander, 6"		4	4		1,650	183		1,833	2,075
0700	Drill press, floor mounted, 12", 1/2 H.P.	▼	4	4		410	183		593	735
0800	Dust collector, not incl. ductwork, 6" diameter	1 Shee	1.10	7.273		4,600	400		5,000	5,675
0810	Dust collector bag, 20" diameter	"	5	1.600		435	87.50		522.50	615
1000	Grinders, double wheel, 1/2 H.P.	2 Carp	5	3.200		215	147		362	460
1300	Jointer, 4", 3/4 H.P.		4	4		1,350	183		1,533	1,775
1600	Kilns, 16 C.F., to 2000°		4	4		1,450	183		1,633	1,875
1900	Lathe, woodworking, 10", 1/2 H.P.		4	4		540	183		723	880
2200	Ploner, 13" x 6"		4	4		1,075	183		1,258	1,475
2500	Patter's wheel, motorized		4	4		1,125	183		1,308	1,500
2800	Saws, band, 14", 3/4 H.P.		4	4		920	183		1,103	1,300
3100	Metal cutting band saw, 14"		4	4		2,500	183		2,683	3,025
3400	Radial arm saw, 10", 2 H.P.		4	4		1,350	183		1,533	1,775
3700	Scroll saw, 24"		4	4		580	183		763	925

11 57 Vocational Shop Equipment

11 57 10 – Shop Equipment

11 57 10.10 Vocational School Shop Equipment		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4000	Table saw, 10", 3 H.P.	2 Carp	4	4	Ea.	2,675	183		2,858	3,225
4300	Welder AC arc, 30 amp capacity		4	4		3,150	183		3,333	3,725

11 61 Broadcast, Theater, and Stage Equipment

11 61 23 – Folding and Portable Stages

11 61 23.10 Portable Stages

0010	PORTABLE STAGES									
1500	Flooring, portable oak parquet, 3' x 3' sections				S.F.	13.40			13.40	14.70
1600	Cart to carry 225 S.F. of flooring				Ea.	400			400	440
5000	Stages, portable with steps, folding legs, stack, 8" high				SF Stg.	32			32	35.50
5100	16" high					49			49	54
5200	32" high					53			53	58
5300	40" high					59.50			59.50	65
6000	Telescoping platforms, extruded alum., straight, minimum	4 Carp	157	.204		34	9.35		43.35	51.50
6100	Maximum		77	.416		47	19.05		66.05	81.50
6500	Pie-shaped, minimum		150	.213		73.50	9.80		83.30	95.50
6600	Maximum		70	.457		82	21		103	123
6800	For 3/4" plywood covered deck, deduct					4.16			4.16	4.58
7000	Band risers, steel frame, plywood deck, minimum	4 Carp	275	.116		30.50	5.35		35.85	42
7100	Maximum	"	138	.232		69	10.65		79.65	92.50
7500	Chairs for above, self-storing, minimum	2 Carp	43	.372	Ea.	109	17.05		126.05	147
7600	Maximum	"	40	.400	"	192	18.35		210.35	240

11 61 33 – Rigging Systems and Controls

11 61 33.10 Controls

0010	CONTROLS									
0050	Control boards with dimmers and breakers, minimum	1 Elec	1	8	Ea.	12,500	425		12,925	14,300
0100	Average		.50	16		39,200	855		40,055	44,400
0150	Maximum		.20	40		127,500	2,125		129,625	143,500
8000	Rule of thumb: total stage equipment, minimum	4 Carp	100	.320	SF Stg.	97	14.65		111.65	130
8100	Maximum	"	25	1.280	"	545	58.50		603.50	690

11 61 43 – Stage Curtains

11 61 43.10 Curtains

0010	CURTAINS									
0500	Curtain track, straight, light duty	2 Carp	20	.800	L.F.	27.50	36.50		64	86.50
0600	Heavy duty		18	.889		61.50	41		102.50	131
0700	Curved sections		12	1.333		175	61		236	288
1000	Curtains, velour, medium weight		600	.027	S.F.	7.90	1.22		9.12	10.60
1150	Silica based yarn, inherently fire retardant		50	.320	"	15.20	14.65		29.85	39

11 62 Musical Equipment

11 62 16 – Carillons

11 62 16.10 Bell Tower Equipment

0010	BELL TOWER EQUIPMENT	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0300	Corillon, 4 octave (48 bells), with keyboard				-System	984,000			984,000	1,082,500
0320	2 octave (24 bells)					463,000			463,000	509,500
0340	3 to 4 bell peal, minimum					116,000			116,000	127,500
0360	Maximum				▼	694,500			694,500	764,000
0380	Cast bronze bell, average				Ea.	104,000			104,000	114,500
0400	Electronic, digital, minimum					17,400			17,400	19,100
0410	With keyboard, maximum				▼	87,000			87,000	95,500

11 66 Athletic Equipment

11 66 13 – Exercise Equipment

11 66 13.10 Physical Training Equipment

0010	PHYSICAL TRAINING EQUIPMENT									
0020	Abdominal rock, 2 board capacity				Ea.	480			480	530
0050	Abdominal board, upholstered					655			655	720
0200	Bicycle trainer, minimum					480			480	525
0300	Deluxe, electric					4,300			4,300	4,725
0400	Barbell set, chrome plated steel, 25 lb.					249			249	274
0420	100 lb.					460			460	505
0450	200 lb.				▼	700			700	770
0500	Weight plates, cast iron, per lb.				Lb.	5.20			5.20	5.70
0520	Storage rack, 10 station				Ea.	900			900	990
0600	Circuit training apparatus, 12 machines minimum	2 Clab	1.25	12.800	Set	28,700	470		29,170	32,200
0700	Average		1	16		35,200	585		35,785	39,600
0800	Maximum	▼	.75	21.333		41,700	780		42,480	47,100
0820	Dumbbell set, cast iron, with rack and 5 pair				▼	620			620	680
0900	Squat racks	2 Clab	5	3.200	Ea.	890	117		1,007	1,150
1200	Multi-station gym machine, 5 station					5,000			5,000	5,500
1250	9 station					11,600			11,600	12,800
1280	Rowing machine, hydraulic					1,750			1,750	1,925
1300	Treadmill, manual					1,100			1,100	1,200
1320	Motorized					3,500			3,500	3,850
1340	Electronic					3,700			3,700	4,075
1360	Cardio-testing					4,525			4,525	5,000
1400	Treatment/massage tables, minimum					590			590	645
1420	Deluxe, with accessories					720			720	790
4150	Exercise equipment, bicycle trainer					750			750	825
4180	Chinning bar, adjustable, wall mounted	1 Corp	5	1.600		210	73.50		283.50	345
4200	Exercise ladder, 16' x 1'-7", suspended	L-2	3	5.333		1,350	215		1,565	1,800
4210	High bar, floor plate attached	1 Corp	4	2		2,225	91.50		2,316.50	2,575
4240	Parallel bars, adjustable		4	2		1,750	91.50		1,841.50	2,075
4270	Uneven parallel bars, adjustable	▼	4	2	▼	3,200	91.50		3,291.50	3,650
4280	Wall mounted, adjustable	L-2	1.50	10.667	Set	855	430		1,285	1,600
4300	Rope, ceiling mounted, 18' long	1 Corp	3.66	2.186	Ea.	188	100		288	360
4330	Side horse, vaulting		5	1.600		1,350	73.50		1,423.50	1,600
4360	Treadmill, motorized, deluxe, training type		5	1.600		3,800	73.50		3,873.50	4,300
4390	Weight lifting multi-station, minimum	2 Clab	1	16		330	585		915	1,275
4450	Maximum	"	.50	32	▼	14,700	1,175		15,875	18,000

11 66 Athletic Equipment

11 66 23 – Gymnasium Equipment

11 66 23.13 Basketball Equipment		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
0010	BASKETBALL EQUIPMENT									
1000	Backstops, wall mtd., 6' extended, fixed, minimum	L-2	1	16	Ea.	1,375	645		2,020	2,500
1100	Maximum		1	16		1,875	645		2,520	3,075
1200	Swing up, minimum		1	16		1,425	645		2,070	2,575
1250	Maximum		1	16		2,800	645		3,445	4,100
1300	Portable, manual, heavy duty, spring operated		1.90	8.421		12,600	340		12,940	14,300
1400	Ceiling suspended, stationary, minimum		.78	20.513		4,000	825		4,825	5,675
1450	Fold up, with accessories, maximum	▼	.40	40		6,000	1,600		7,600	9,100
1600	For electrically operated, add	1 Elec	1	8		2,300	425		2,725	3,200
5800	Wall pads, 1-1/2" thick, standard (not fire rated)	2 Corp	640	.025	S.F.	6.20	1.15		7.35	8.55

11 66 23.19 Boxing Ring

0010	BOXING RING									
4100	Elevated, 22' x 22'	L-4	.10	240	Ea.	7,000	10,300		17,300	23,700
4110	For cellular plastic foam padding, add		.10	240		1,025	10,300		11,325	17,100
4120	Floor level, including posts and ropes only, 20' x 20'		.80	30		4,500	1,300		5,800	6,950
4130	Canvas, 30' x 30'	▼	5	4.800	▼	1,250	207		1,457	1,700

11 66 23.47 Gym Mats

0010	GYM MATS									
5500	2" thick, naugahyde covered				S.F.	3.67			3.67	4.04
5600	Vinyl/nylon covered					7.95			7.95	8.70
6000	Wrestling mats, 1" thick, heavy duty					5.55			5.55	6.10

11 66 43 – Interior Scoreboards

11 66 43.10 Scoreboards

0010	SCOREBOARDS									
7000	Baseball, minimum	R-3	1.30	15.385	Ea.	4,075	815	108	4,998	5,825
7200	Maximum		.05	400		17,900	21,200	2,800	41,900	54,500
7300	Football, minimum		.86	23.256		5,275	1,225	163	6,663	7,825
7400	Maximum		.20	100		15,700	5,300	700	21,700	26,000
7500	Basketball (one side), minimum		2.07	9.662		2,375	510	67.50	2,952.50	3,475
7600	Maximum		.30	66.667		3,475	3,525	465	7,465	9,650
7700	Hockey-basketball (four sides), minimum		.25	80		5,600	4,225	560	10,385	13,100
7800	Maximum		.15	133		5,675	7,050	935	13,660	17,900

11 66 53 – Gymnasium Dividers

11 66 53.10 Divider Curtains

0010	DIVIDER CURTAINS									
4500	Gym divider curtain, mesh top, vinyl bottom, manual	L-4	500	.048	S.F.	8.90	2.07		10.97	13
4700	Electric roll up	L-7	400	.070	"	11.90	3.10		15	17.85

11 67 Recreational Equipment

11 67 13 – Bowling Alley Equipment

11 67 13.10 Bowling Alleys

0010	BOWLING ALLEYS Including alley, pinsetter, scarer,									
0020	Counters and misc. supplies, minimum	4 Corp	.20	160	Lane	41,700	7,325		49,025	57,000
0150	Average		.19	168		45,900	7,725		53,625	62,500
0300	Maximum		.18	177		53,000	8,150		61,150	70,500
0400	Comba table ball rack, add					1,150			1,150	1,250
0600	For automatic scarer, add, minimum					8,225			8,225	9,050
0700	Maximum				▼	9,875			9,875	10,900

11 67 Recreational Equipment

11 67 23 – Shooting Range Equipment

11 67 23.10 Shooting Range		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs Labor Equipment		Total	Total Incl O&P
0010	SHOOTING RANGE Incl. bullet traps, target provisions, controls,									
0100	Separators, ceiling system, etc. Not incl. structural shell									
0200	Commercial	L-9	.64	56.250	Point	28,000	2,350		30,350	34,600
0300	Low enforcement		.28	128		38,000	5,375		43,375	50,500
0400	Notional Guard armories		.71	50.704		20,500	2,125		22,625	26,000
0500	Reserve training centers		.71	50.704		15,800	2,125		17,925	20,700
0600	Schools and colleges		.32	112		35,000	4,700		39,700	46,000
0700	Major academies	▼	.19	189		52,000	7,925		59,925	69,500
0800	For acoustical treatment, odd					10%	10%			
0900	For lighting, odd					28%	25%			
1000	For plumbing, odd					5%	5%			
1100	For ventilating system, odd, minimum					40%	40%			
1200	Add, overage					25%	25%			
1300	Add, maximum				▼	35%	35%			

11 68 Play Field Equipment and Structures

11 68 13 – Playground Equipment

11 68 13.10 Free-Standing Playground Equipment

0010	FREE-STANDING PLAYGROUND EQUIPMENT See also individual items									
0200	Bike rock, 10' long, permanent	G	B-1	12	2	Eo.	420	74.50	494.50	580
0400	Horizontal monkey ladder, 14' long, 6' high			4	6		895	224	1,119	1,325
0590	Parallel bars, 10' long			4	6		315	224	539	695
0600	Posts, tether ball set, 2-3/8" O.D.			12	2	▼	450	74.50	524.50	610
0800	Poles, multiple purpose, 10'-6" long			12	2	Pr.	176	74.50	250.50	310
1000	Ground socket for movable posts, 2-3/8" post			10	2.400		101	89.50	190.50	249
1100	3-1/2" post			10	2.400	▼	165	89.50	254.50	320
1300	See-saw, spring, steel, 2 units			6	4	Eo.	735	149	884	1,025
1400	4 units			4	6		1,275	224	1,499	1,750
1500	6 units			3	8		1,650	299	1,949	2,275
1700	Shelter, fiberglass golf tee, 3 person			4.60	5.217		4,300	195	4,495	5,050
1900	Slides, stainless steel bed, 12' long, 6' high			3	8		3,275	299	3,574	4,075
2000	20' long, 10' high			2	12		3,650	450	4,100	4,700
2200	Swings, plain seats, 8' high, 4 seats			2	12		1,150	450	1,600	1,950
2300	8 seats			1.30	18.462		2,150	690	2,840	3,425
2500	12' high, 4 seats			2	12		2,125	450	2,575	3,025
2600	8 seats			1.30	18.462		3,475	690	4,165	4,900
2800	Whirlers, 8' diameter			3	8		2,725	299	3,024	3,450
2900	10' diameter			3	8		6,200	299	6,499	7,275

11 68 13.20 Modular Playground

0010	MODULAR PLAYGROUND Basic components									
0100	Deck, square, steel, 48" x 48"		B-1	1	24	Eo.	515	895	1,410	1,950
0110	Recycled polyurethane			1	24		510	895	1,405	1,925
0120	Triangular, steel, 48" side			1	24		670	895	1,565	2,125
0130	Post, steel, 5" square			18	1.333	L.F.	40	50	90	121
0140	Aluminum, 2-3/8" square			20	1.200		39	45	84	112
0150	5" square			18	1.333	▼	40	50	90	121
0160	Roof, square poly, 54" side			18	1.333	Eo.	1,400	50	1,450	1,600
0170	Wheelchair transfer module, for 3' high deck			3	8	"	2,925	299	3,224	3,650
0180	Guardrail, pipe, 36" high			60	.400	L.F.	196	14.95	210.95	239
0190	Steps, deck-to-deck, 3 – 8" steps			8	3	Eo.	1,100	112	1,212	1,400

11 68 Play Field Equipment and Structures

11 68 13 – Playground Equipment

11 68 13.20 Modular Playground

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0200	Activity panel, crawl through panel	B-1	2	12	Eo.	495	450		945	1,225
0210	Alphabet/spelling panel		2	12		550	450		1,000	1,300
0360	With guardrails		3	8		1,825	299		2,124	2,450
0370	Crawl tunnel, straight, 56" long		4	6		1,200	224		1,424	1,675
0380	90°, 4' long		4	6		1,375	224		1,599	1,875
1200	Slide, tunnel, for 56" high deck		8	3		1,725	112		1,837	2,075
1210	Straight, poly		8	3		385	112		497	600
1220	Stainless steel, 54" high deck		6	4		680	149		829	980
1230	Curved, poly, 40" high deck		6	4		855	149		1,004	1,175
1240	Spiral slide, 56" - 72" high		5	4.800		4,425	179		4,604	5,125
1300	Ladder, vertical, for 24" - 72" high deck		5	4.800		550	179		729	880
1310	Horizontal, 8' long		5	4.800		690	179		869	1,025
1320	Corkscrew climber, 6' high		3	8		1,125	299		1,424	1,675
1330	Fire pole for 72" high deck		6	4		650	149		799	945
1340	Bridge, ring climber, 8' long		4	6		1,875	224		2,099	2,400
1350	Suspension		4	6	L.F.	355	224		579	740

11 68 16 – Play Structures

11 68 16.10 Handball/Squash Court

0010	HANDBALL/SQUASH COURT , outdoor									
0900	Handball or squash court, outdoor, wood	2 Corp	.50	32	Eo.	4,975	1,475		6,450	7,750
1000	Masonry handball/squash court	D-1	.30	53.333	"	23,900	2,200		26,100	29,700

11 68 16.30 Platform/Paddle Tennis Court

0010	PLATFORM/PADDLE TENNIS COURT Complete with lighting, etc.									
0100	Aluminum slot deck with aluminum frame	B-1	.08	300	Court	60,000	11,200		71,200	83,500
0500	Aluminum slot deck with wood frame	C-1	.12	266		62,500	11,600		74,100	87,000
0800	Aluminum deck heater, odd	B-1	1.18	20.339		2,550	760		3,310	3,975
0900	Douglas fir planking with wood frame 2" x 6" x 30'	C-1	.12	266		59,000	11,600		70,600	82,500
1000	Plywood deck with steel frame		.12	266		59,000	11,600		70,600	82,500
1100	Steel slot deck with wood frame	▼	.12	266	▼	38,900	11,600		50,500	60,500

11 68 33 – Athletic Field Equipment

11 68 33.13 Football Field Equipment

0010	FOOTBALL FIELD EQUIPMENT									
0020	Goal posts, steel, football, double post	B-1	1.50	16	Pr.	3,750	595		4,345	5,050
0100	Deluxe, single post		1.50	16		2,600	595		3,195	3,775
0300	Football, convertible to soccer		1.50	16		2,800	595		3,395	4,000
0500	Soccer, regulation	▼	2	12	▼	1,400	450		1,850	2,250

11 71 Medical Sterilizing Equipment

11 71 10 – Medical Sterilizers & Distillers

11 71 10.10 Sterilizers and Distillers

0010	STERILIZERS AND DISTILLERS									
0700	Distiller, water, steam heated, 50 gal. capacity	1 Plum	1.40	5.714	Eo.	19,000	330		19,330	21,400
5600	Sterilizers, floor loading, 26" x 62" x 42", single door, steam					121,000			121,000	133,000
5650	Double door, steam					204,000			204,000	224,000
5800	General purpose, 20" x 20" x 38", single door					12,900			12,900	14,200
6000	Portable, counter top, steam, minimum					3,500			3,500	3,850
6020	Maximum					4,275			4,275	4,700
6050	Portable, counter top, gas, 17" x 15" x 32-1/2"					39,300			39,300	43,200
6150	Manual washer/sterilizer, 16" x 16" x 26"	1 Plum	2	4		54,000	230		54,230	59,500
6200	Steam generators, electric 10 kW to 180 kW, freestanding									

11 71 Medical Sterilizing Equipment

11 71 10 – Medical Sterilizers & Distillers

11 71 10.10 Sterilizers and Distillers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
6250	Minimum	1 Elec	3	2.667	Ea.	8,675	142		8,817	9,775
6300	Maximum	"	.70	11.429		28,800	610		29,410	32,600
8200	Bed pan washer-sanitizer	1 Plum	2	4	▼	7,425	230		7,655	8,500

11 72 Examination and Treatment Equipment

11 72 13 – Examination Equipment

11 72 13.13 Examination Equipment

0010	EXAMINATION EQUIPMENT									
0300	Blood pressure unit, mercurial, wall				Ea.	150			150	165
0400	Diagnostic set, wall					770			770	845
4400	Scale, physician's, with height rod					315			315	350

11 72 53 – Treatment Equipment

11 72 53.13 Medical Treatment Equipment

0010	MEDICAL TREATMENT EQUIPMENT									
6500	Surgery table, minor minimum	1 Sswk	.70	11.429	Ea.	12,000	585		12,585	14,200
6520	Maximum	"	.50	16		20,000	820		20,820	23,500
6700	Surgical lights, doctor's office, single arm	2 Elec	2	8		2,325	425		2,750	3,200
6750	Dual arm	"	1	16	▼	4,525	855		5,380	6,250

11 73 Patient Care Equipment

11 73 10 – Patient Treatment Equipment

11 73 10.10 Treatment Equipment

0010	TREATMENT EQUIPMENT									
0750	Exam room furnishings, average per room				Ea.	6,975			6,975	7,675
1800	Heat therapy unit, humidified, 26" x 78" x 28"				"	3,550			3,550	3,925
2100	Hubbard tank with accessories, stainless steel,									
2110	125 GPM at 45 psi water pressure				Ea.	26,800			26,800	29,500
2150	For electric overhead hoist, add					2,925			2,925	3,225
2900	K-Module for heat therapy, 20 oz. capacity, 75°F to 110°F					420			420	460
3600	Paraffin bath, 126°F, auto controlled					1,100			1,100	1,200
3900	Parallel bars for walking training, 12'-0"					1,425			1,425	1,575
4600	Station, dietary, medium, with ice					16,500			16,500	18,200
4700	Medicine					7,450			7,450	8,200
7000	Tables, physical therapy, walk off, electric	2 Corp	3	5.333		3,325	245		3,570	4,050
7150	Standard, vinyl top with base cabinets, minimum	▼	3	5.333		1,000	245		1,245	1,475
7200	Maximum	▼	2	8		5,550	365		5,915	6,675
8400	Whirlpool bath, mobile, sst, 18" x 24" x 60"					4,850			4,850	5,325
8450	Fixed, incl. mixing valves	1 Plum	2	4	▼	9,575	230		9,805	10,900

11 73 10.20 Bariatric Equipment

0010	BARIATRIC EQUIPMENT									
5000	Patient lift, electric operated, arm style									
5110	400 lb. capacity				Ea.	1,975			1,975	2,175
5120	450 lb. capacity					3,000			3,000	3,300
5130	600 lb. capacity					3,150			3,150	3,475
5140	700 lb. capacity					5,000			5,000	5,500
5150	1,000 lb. capacity					10,700			10,700	11,800
5200	Overhead, 4-post, 1,000 lb. capacity					10,300			10,300	11,300
5300	Overhead, track type, 450 lb. capacity, not including track					2,950			2,950	3,250

11 73 Patient Care Equipment

11 73 10 – Patient Treatment Equipment

11 73 10.20 Bariatric Equipment		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5500	For fabric sling, add				Ea.	310			310	340
5550	For digital scale, add					770			770	845

11 74 Dental Equipment

11 74 10 – Dental Office Equipment

11 74 10.10 Diagnostic and Treatment Equipment

0010 DIAGNOSTIC AND TREATMENT EQUIPMENT										
0020	Central suction system, minimum	1 Plum	1.20	6.667	Ea.	1,550	385		1,935	2,275
0100	Maximum	"	.90	8.889		4,400	510		4,910	5,625
0300	Air compressor, minimum	1 Skwk	.80	10		3,000	475		3,475	4,025
0400	Maximum		.50	16		8,850	755		9,605	10,900
0600	Chair, electric or hydraulic, minimum		.50	16		2,225	755		2,980	3,625
0700	Maximum	▼	.25	32		7,725	1,525		9,250	10,900
0800	Doctor's/assistant's stool, minimum					251			251	276
0850	Maximum					705			705	775
1000	Drill console with accessories, minimum	1 Skwk	1.60	5		2,075	237		2,312	2,650
1100	Maximum		1.60	5		4,850	237		5,087	5,700
2000	Light, ceiling mounted, minimum		8	1		1,150	47.50		1,197.50	1,350
2100	Maximum	▼	8	1		2,000	47.50		2,047.50	2,275
2200	Unit light, minimum	2 Skwk	5.33	3.002		730	142		872	1,025
2210	Maximum		5.33	3.002		1,550	142		1,692	1,950
2220	Track light, minimum		3.20	5		1,550	237		1,787	2,100
2230	Maximum	▼	3.20	5		2,625	237		2,862	3,275
2300	Sterilizers, steam portable, minimum					1,300			1,300	1,425
2350	Maximum					10,400			10,400	11,400
2600	Steam, institutional					3,250			3,250	3,550
2650	Dry heat, electric, portable, 3 trays					1,225			1,225	1,325
2700	Ultra-sonic cleaner, portable, minimum					440			440	485
2750	Maximum (institutional)					1,325			1,325	1,450
3000	X-ray unit, wall, minimum	1 Skwk	4	2		2,325	94.50		2,419.50	2,700
3010	Maximum		4	2		4,000	94.50		4,094.50	4,550
3100	Panoramic unit		.60	13.333		15,500	630		16,130	18,100
3105	Deluxe, minimum	2 Skwk	1.60	10		16,500	475		16,975	18,800
3110	Maximum	"	1.60	10		40,500	475		40,975	45,200
3500	Developers, X-ray, average	1 Plum	5.33	1.501		4,950	86.50		5,036.50	5,575
3600	Maximum	"	5.33	1.501	▼	8,100	86.50		8,186.50	9,025

11 76 Operating Room Equipment

11 76 10 – Operating Room Equipment

11 76 10.10 Surgical Equipment

0010 SURGICAL EQUIPMENT										
5000	Scrub, surgical, stainless steel, single station, minimum	1 Plum	3	2.667	Ea.	4,250	153		4,403	4,900
5100	Maximum					6,900			6,900	7,600
6550	Major surgery table, minimum	1 Sswk	.50	16		26,000	820		26,820	30,100
6570	Maximum	"	.50	16		28,000	820		28,820	32,300
6800	Surgical lights, major operating room, dual head, minimum	2 Elec	1	16		4,450	855		5,305	6,150
6850	Maximum	"	1	16	▼	29,700	855		30,555	34,000

11 77 Radiology Equipment

11 77 10 – Radiology Equipment

11 77 10.10 X-Ray Equipment

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	X-RAY EQUIPMENT									
8700	X-ray, mobile, minimum				Ea.	16,600			16,600	18,300
8750	Maximum					77,000			77,000	84,500
8900	Stationary, minimum					42,700			42,700	47,000
8950	Maximum					222,000			222,000	244,000
9150	Developing processors, minimum					4,700			4,700	5,175
9200	Maximum					12,700			12,700	14,000

11 78 Mortuary Equipment

11 78 13 – Mortuary Refrigerators

11 78 13.10 Mortuary and Autopsy Equipment

0010	MORTUARY AND AUTOPSY EQUIPMENT									
0015	Autopsy table, standard	1 Plum	1	8	Ea.	9,625	460		10,085	11,300
0020	Deluxe	"	.60	13.333		14,900	765		15,665	17,600
3200	Mortuary refrigerator, end operated, 2 capacity					12,200			12,200	13,400
3300	6 capacity					21,900			21,900	24,100

11 78 16 – Crematorium Equipment

11 78 16.10 Crematory

0010	CREMATORY									
1500	Crematory, nat including building, 1 place	Q-3	.20	160	Ea.	71,500	8,775		80,275	92,000
1750	2 place	"	.10	320	"	102,500	17,500		120,000	139,000

11 82 Solid Waste Handling Equipment

11 82 19 – Packaged Incinerators

11 82 19.10 Packaged Gas Fired Incinerators

0010	PACKAGED GAS FIRED INCINERATORS									
4400	Incinerator, gas, nat incl. chimney, elec. ar pipe, 50#/hr., minimum	Q-3	.80	40	Ea.	38,000	2,200		40,200	45,100
4420	Maximum		.70	45.714		40,000	2,500		42,500	47,800
4440	200 lb. per hr., minimum (batch type)		.60	53.333		67,000	2,925		69,925	78,000
4460	Maximum (with feeder)		.50	64		75,000	3,500		78,500	88,000
4480	400 lb. per hr., minimum (batch type)		.30	106		78,000	5,850		83,850	95,000
4500	Maximum (with feeder)		.25	128		100,000	7,025		107,025	120,500
4520	800 lb. per hr., with feeder, minimum		.20	160		120,000	8,775		128,775	145,000
4540	Maximum		.17	188		180,000	10,300		190,300	213,500
4560	1,200 lb. per hr., with feeder, minimum		.15	213		152,000	11,700		163,700	184,500
4580	Maximum		.11	290		197,500	15,900		213,400	241,500
4600	2,000 lb. per hr., with feeder, minimum		.10	320		400,000	17,500		417,500	466,500
4620	Maximum		.05	640		600,000	35,100		635,100	713,000
4700	For heat recovery system, add, minimum		.25	128		80,000	7,025		87,025	98,500
4710	Add, maximum		.11	290		250,000	15,900		265,900	299,000
4720	For automatic ash conveyer, add		.50	64		33,300	3,500		36,800	41,900
4750	Large municipal incinerators, incl. stack, minimum		.25	128	Ton/day	20,200	7,025		27,225	32,800
4850	Maximum		.10	320	"	54,000	17,500		71,500	85,500

11 82 26 – Facility Waste Compactors

11 82 26.10 Compactors

0010	COMPACTORS									
0020	Compactors, 115 valt, 250#/hr., chute fed	L-4	1	24	Ea.	11,900	1,025		12,925	14,700
0100	Hand fed		2.40	10		14,900	430		15,330	17,100

11 82 Solid Waste Handling Equipment

11 82 26 – Facility Waste Compactors

11 82 26.10 Compactors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0300	Multi-bag, 230 volt, 600#/hr., chute fed	L-4	1	24	Ea.	14,900	1,025		15,925	18,000
0400	Hand fed		1	24		15,100	1,025		16,125	18,200
0500	Containerized, hand fed, 2 to 6 C.Y. containers, 250#/hr.		1	24		14,900	1,025		15,925	18,000
0550	Far chute fed, add per floor		1	24		1,375	1,025		2,400	3,125
1000	Heavy duty industrial compactor, 0.5 C.Y. capacity		1	24		10,000	1,025		11,025	12,600
1050	1.0 C.Y. capacity		1	24		15,000	1,025		16,025	18,100
1100	3.0 C.Y. capacity		.50	48		25,600	2,075		27,675	31,400
1150	5.0 C.Y. capacity		.50	48		32,200	2,075		34,275	38,600
1200	Combination shredder/compactor (5,000 lb./hr.)		.50	48		62,500	2,075		64,575	72,000
1400	Far handling hazardous waste materials, 55 gallon drum packer, std.					19,500			19,500	21,500
1410	55 gallon drum packer w/HEPA filter					24,300			24,300	26,700
1420	55 gallon drum packer w/charcoal & HEPA filter					32,400			32,400	35,600
1430	All of the above made explosion proof, add					1,425			1,425	1,575
5500	Shredder, municipal use, 35 ton per hour					301,000			301,000	331,000
5600	60 ton per hour					641,000			641,000	705,000
5750	Shredder & baler, 50 ton per day					601,000			601,000	661,000
5800	Shredder, industrial, minimum					23,700			23,700	26,100
5850	Maximum					127,000			127,000	139,500
5900	Baler, industrial, minimum					9,500			9,500	10,500
5950	Maximum				▼	554,000			554,000	609,500
6000	Transfer station compactor, with power unit									
6050	and pedestal, not including pit, 50 ton per hour				Ea.	190,000			190,000	209,000

11 91 Religious Equipment

11 91 13 – Baptisteries

11 91 13.10 Baptistry

0010	BAPTISTRY									
0150	Fiberglass, 3'-6" deep, x 13'-7" long,									
0160	steps at both ends, incl. plumbing, minimum	L-8	1	20	Ea.	5,650	965		6,615	7,700
0200	Maximum	"	.70	28.571		9,225	1,375		10,600	12,200
0250	Add for filter, heater and lights				▼	1,825			1,825	2,025

11 91 23 – Sanctuary Equipment

11 91 23.10 Sanctuary Furnishings

0010	SANCTUARY FURNISHINGS									
0020	Altar, wood, custom design, plain	1 Corp	1.40	5.714	Ea.	2,525	262		2,787	3,175
0050	Deluxe	"	.20	40		12,200	1,825		14,025	16,200
0070	Granite or marble, average	2 Mbr	.50	32		13,200	1,350		14,550	16,600
0090	Deluxe	"	.20	80		37,500	3,375		40,875	46,500
0100	Arks, prefabricated, plain	2 Carp	.80	20		9,650	915		10,565	12,000
0130	Deluxe, maximum	"	.20	80		137,000	3,675		140,675	156,000
0500	Reconciliation room, wood, prefabricated, single, plain	1 Carp	.60	13.333		3,150	610		3,760	4,400
0550	Deluxe		.40	20		8,650	915		9,565	10,900
0650	Double, plain		.40	20		6,275	915		7,190	8,350
0700	Deluxe		.20	40		18,800	1,825		20,625	23,400
1000	Lecterns, wood, plain		5	1.600		835	73.50		908.50	1,025
1100	Deluxe		2	4		6,050	183		6,233	6,925
2000	Pulpits, hardwood, prefabricated, plain		2	4		1,475	183		1,658	1,900
2100	Deluxe		1.60	5	▼	10,000	229		10,229	11,400
2500	Railing, hardwood, average		25	.320	L.F.	206	14.65		220.65	249
3000	Seating, individual, oak, cantaur, laminated		21	.381	Person	176	17.45		193.45	221

11 91 Religious Equipment

11 91 23 – Sanctuary Equipment

11 91 23.10 Sanctuary Furnishings

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3100	Cushion seat	1 Carp	21	.381	Person	160	17.45		177.45	203
3200	Fully upholstered		21	.381		156	17.45		173.45	199
3300	Combination, self-rising		21	.381		300	17.45		317.45	355
3500	Far cherry, add				▼	30%				
5000	Wall cross, aluminum, extruded, 2" x 2" section	1 Carp	34	.235	L.F.	215	10.80		225.80	254
5150	4" x 4" section		29	.276		310	12.65		322.65	360
5300	Brnze, extruded, 1" x 2" section		31	.258		425	11.85		436.85	485
5350	2-1/2" x 2-1/2" section		34	.235		640	10.80		650.80	720
5450	Solid bar stack, 1/2" x 3" section		29	.276 *		845	12.65		857.65	950
5600	Fiberglass, stack		34	.235		145	10.80		155.80	177
5700	Stainless steel, 4" deep, channel section		29	.276		680	12.65		692.65	770
5800	4" deep box section	▼	29	.276	▼	925	12.65		937.65	1,050

Estimating Tips

General

• The items in this division are usually priced per square foot or each. Most of these items are purchased by the owner and installed by the contractor. Do not assume the items in Division 12 will be purchased and installed by the contractor. Check the specifications for responsibilities and include receiving, storage, installation, and mechanical and electrical hookups in the appropriate divisions.

- Some items in this division require some type of support system that is not usually furnished with the item. Examples of these systems include blocking for the attachment of casework and heavy drapery rods. The required blocking must be added to the estimate in the appropriate division.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

12 21 Window Blinds

12 21 13 – Horizontal Louver Blinds

12 21 13.13 Metal Horizontal Louver Blinds

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	METAL HORIZONTAL LOUVER BLINDS									
0020	Harizantol, 1" aluminum slots, solid calar, stock	1 Corp	590	.014	S.F.	4.80	.62		5.42	6.25
0070	Horizontol, 1" aluminum slots, custom color		590	.014		5.30	.62		5.92	6.75
0250	2" aluminum slots, solid color, stock		590	.014		7.65	.62		8.27	9.35
0275	2" aluminum slots, custom color	▼	590	.014	▼	5.60	.62		6.22	7.10

12 21 13.33 Vinyl Horizontal Louver Blinds

0010	VINYL HORIZONTAL LOUVER BLINDS									
0100	2" compasite, 48" wide, 48" high	1 Corp	30	.267	Eo.	90	12.25		102.25	118
0120	72" high		29	.276		129	12.65		141.65	161
0140	96" high		28	.286		177	13.10		190.10	214
0200	60" wide, 60" high		27	.296		97.50	13.60		111.10	128
0220	72" high		25	.320		112	14.65		126.65	146
0240	96" high		24	.333		178	15.30		193.30	220
0300	72" wide, 72" high		25	.320		190	14.65		204.65	233
0320	96" high		23	.348		266	15.95		281.95	315
0400	96" wide, 96" high		20	.400		310	18.35		328.35	370
1000	2" faux wood, 48" wide, 48" high		30	.267		58	12.25		70.25	83
1020	72" high		29	.276		79	12.65		91.65	107
1040	96" high		28	.286		98	13.10		111.10	128
1300	72" wide, 72" high		25	.320		122	14.65		136.65	158
1320	96" high		23	.348		192	15.95		207.95	236
1400	96" wide, 96" high	▼	20	.400	▼	212	18.35		230.35	263

12 21 16 – Vertical Louver Blinds

12 21 16.13 Metal Vertical Louver Blinds

0010	METAL VERTICAL LOUVER BLINDS									
1500	Vertical, 3" PVC strips, minimum	1 Corp	460	.017	S.F.	7.80	.80		8.60	9.80
1600	Maximum		400	.020		23	.92		23.92	27
1800	4" aluminum slots, minimum		460	.017		7.95	.80		8.75	10
1900	Maximum	▼	400	.020	▼	14.65	.92		15.57	17.55

12 22 Curtains and Drapes

12 22 16 – Drapery Track and Accessories

12 22 16.10 Drapery Hardware

0010	DRAPERY HARDWARE									
0030	Standard troverse, per foot, minimum	1 Corp	59	.136	L.F.	6.85	6.20		13.05	17.10
0100	Maximum		51	.157	"	10	7.20		17.20	22
4000	Troverse rods, adjustable, 28" to 48"		22	.364	Eo.	22.50	16.65		39.15	50
4020	48" to 84"		20	.400		28.50	18.35		46.85	59.50
4040	66" to 120"		18	.444		34.50	20.50		55	69
4060	84" to 156"		16	.500		39	23		62	78.50
4080	100" to 180"		14	.571		45.50	26		71.50	90.50
4090	156" to 228"		13	.615		54.50	28		82.50	104
4100	228" to 312"		13	.615		63	28		91	113
4200	Double rods, adjustable, 30" to 48"		9	.889		41.50	41		82.50	109
4220	48" to 86"		9	.889		57.50	41		98.50	127
4240	86" to 150"		8	1		64	46		110	141
4260	100" to 180"		7	1.143		67	52.50		119.50	155
4300	Curtoin rod & brockets, adjustable, 30" to 48"		9	.889		29	41		70	95
4320	48" to 86"		9	.889		41.50	41		82.50	109
4340	86" to 150"		8	1		51	46		97	127

12 22 Curtains and Drapes

12 22 16 – Drapery Track and Accessories

12 22 16.10 Drapery Hardware		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
4360	100" to 180"	1 Carp	7	1.143	Ea.	63	52.50		115.50	151
4600	Valonce, pinch pleated fabric, 12" deep, up to 54" long, minimum					38.50			38.50	42.50
4610	Maximum					96			96	106
4620	Up to 77" long, minimum					59			59	65
4630	Maximum					155			155	171
5000	Stationary rods, first 2'				▼	8.10			8.10	8.90
5020	Each additional foot, odd				L.F.	3.82			3.82	4.20

12 22 16.20 Blast Curtains

0010	BLAST CURTAINS per L.F. horizontal opening width, off-white or gray fabric									
0100	Blast curtains, drapery system, complete, including hardware, minimum	1 Carp	10.25	.780	L.F.	185	36		221	259
0120	Average		10.25	.780		200	36		236	275
0140	Maximum		10.25	.780		230	36		266	310

12 23 Interior Shutters

12 23 10 – Wood Interior Shutters

12 23 10.10 Wood Interior Shutters

0010	WOOD INTERIOR SHUTTERS, louvered									
0200	Two panel, 27" wide, 36" high	1 Carp	5	1.600	Set	147	73.50		220.50	275
0300	33" wide, 36" high		5	1.600		190	73.50		263.50	320
0500	47" wide, 36" high		5	1.600		255	73.50		328.50	395
1000	Four panel, 27" wide, 36" high		5	1.600		216	73.50		289.50	350
1100	33" wide, 36" high		5	1.600		276	73.50		349.50	420
1300	47" wide, 36" high	▼	5	1.600	▼	370	73.50		443.50	520

12 23 10.13 Wood Panels

0010	WOOD PANELS									
3000	Wood folding panels with movable louvers, 7" x 20" each	1 Carp	17	.471	Pr.	78	21.50		99.50	120
3300	8" x 28" each		17	.471		78	21.50		99.50	120
3450	9" x 36" each		17	.471		90	21.50		111.50	133
3600	10" x 40" each		17	.471		98	21.50		119.50	142
4000	Fixed louver type, stack units, 8" x 20" each		17	.471		92	21.50		113.50	135
4150	10" x 28" each		17	.471		78	21.50		99.50	119
4300	12" x 36" each		17	.471		92	21.50		113.50	135
4450	18" x 40" each		17	.471		132	21.50		153.50	179
5000	Insert panel type, stack, 7" x 20" each		17	.471		20.50	21.50		42	56
5150	8" x 28" each		17	.471		37.50	21.50		59	74.50
5300	9" x 36" each		17	.471		47.50	21.50		69	85.50
5450	10" x 40" each		17	.471		51	21.50		72.50	89.50
5600	Raised panel type, stock, 10" x 24" each		17	.471		243	21.50		264.50	300
5650	12" x 26" each		17	.471		243	21.50		264.50	300
5700	14" x 30" each		17	.471		268	21.50		289.50	330
5750	16" x 36" each		17	.471		296	21.50		317.50	360
6000	For custom built pine, add					22%				
6500	For custom built hardwood blinds, add					42%				

12 24 Window Shades

12 24 13 – Roller Window Shades

12 24 13.10 Shades

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SHADES									
0020	Basswood, roll-up, stain finish, 3/8" slats	1 Carp	300	.027	S.F.	14.65	1.22		15.87	18
0200	7/8" slats		300	.027		13.85	1.22		15.07	17.10
0300	Vertical side slide, stain finish, 3/8" slats		300	.027		18.95	1.22		20.17	23
0400	7/8" slats	▼	300	.027		18.95	1.22		20.17	23
0500	For fire retardant finishes, add					16%				
0600	For "B" rated finishes, add					20%				
0900	Mylar, single layer, non-heat reflective	1 Carp	685	.012		4.96	.54		5.50	6.30
0910	Mylar, single layer, heat reflective		685	.012		5.35	.54		5.89	6.75
1000	Double layered, heat reflective		685	.012		5.75	.54		6.29	7.15
1100	Triple layered, heat reflective	▼	685	.012	▼	6.25	.54		6.79	7.75
1200	For metal roller instead of wood, add per				Shade	4.42			4.42	4.86
1300	Vinyl coated cotton, standard	1 Carp	685	.012	S.F.	2.84	.54		3.38	3.95
1400	Lightproof decorator shades		685	.012		2.94	.54		3.48	4.06
1500	Vinyl, lightweight, 4 ga.		685	.012		.60	.54		1.14	1.49
1600	Heavyweight, 6 ga.		685	.012		1.83	.54		2.37	2.84
1700	Vinyl laminated fiberglass, 6 ga., translucent		685	.012		2.55	.54		3.09	3.64
1800	Lightproof		685	.012		4.19	.54		4.73	5.45
6011	Solar screening, fiberglass	G ▼	85	.094	▼	6.60	4.32		10.92	13.90

12 32 Manufactured Wood Casework

12 32 16 – Manufactured Plastic-Laminate-Clad Casework

12 32 16.20 Plastic Laminate Casework Doors

0010	PLASTIC LAMINATE CASEWORK DOORS									
1000	For casework frames, see Section 12 32 23.15									
1100	For casework hardware, see Section 12 32 23.35									
6000	Plastic laminate on particle board									
6100	12" wide, 18" high	1 Carp	25	.320	Ea.	24	14.65		38.65	49
6140	30" high	▼	23	.348	▼	40	15.95		55.95	68.50
6500	18" wide, 18" high		24	.333		36	15.30		51.30	63
6600	30" high	▼	22	.364	▼	60	16.65		76.65	91.50

12 32 16.25 Plastic Laminate Drawer Fronts

0010	PLASTIC LAMINATE DRAWER FRONTS									
2800	Plastic laminate on particle board front									
3000	4" high, 12" wide	1 Carp	17	.471	Ea.	3.93	21.50		25.43	38
3200	18" wide	"	16	.500	"	5.90	23		28.90	42

12 32 23 – Hardwood Casework

12 32 23.10 Manufactured Wood Casework, Stock Units

0010	MANUFACTURED WOOD CASEWORK, STOCK UNITS									
0300	Built-in drawer units, pine, 18" deep, 32" high, unfinished									
0400	Minimum	2 Carp	53	.302	L.F.	114	13.85		127.85	147
0500	Maximum	"	40	.400	"	134	18.35		152.35	177
0700	Kitchen base cabinets, hardwood, not incl. counter tops,									
0710	24" deep, 35" high, prefinished									
0800	One top drawer, one door below, 12" wide	2 Carp	24.80	.645	Ea.	254	29.50		283.50	325
0840	18" wide		23.30	.687		287	31.50		318.50	365
0880	24" wide		22.30	.717		350	33		383	435
1000	Four drawers, 12" wide		24.80	.645		267	29.50		296.50	340
1040	18" wide		23.30	.687		298	31.50		329.50	380
1060	24" wide		22.30	.717		330	33		363	410

12 32 Manufactured Wood Casework

12 32 23 – Hardwood Casework

12 32 23.10 Manufactured Wood Casework, Stock Units		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1200	Two top drawers, two doors below, 27" wide	2 Carp	22	.727	Ea.	375	33.50		408.50	465
1260	36" wide		20.30	.788		435	36		471	535
1300	48" wide		18.90	.847		495	39		534	605
1500	Range or sink base, two doors below, 30" wide		21.40	.748		335	34.50		369.50	425
1540	36" wide		20.30	.788		380	36		416	470
1580	48" wide		18.90	.847		415	39		454	520
1800	For sink front units, deduct					154			154	169
2000	Corner base cabinets, 36" wide, standard	2 Carp	18	.889		600	41		641	725
2100	Lazy Susan with revolving door	"	16.50	.970	▼	805	44.50		849.50	955
4000	Kitchen wall cabinets, hardwood, 12" deep with two doors									
4050	12" high, 30" wide	2 Carp	24.80	.645	Ea.	227	29.50		256.50	296
4100	36" wide		24	.667		270	30.50		300.50	345
4400	15" high, 30" wide		24	.667		231	30.50		261.50	300
4440	36" wide		22.70	.705		277	32.50		309.50	355
4700	24" high, 30" wide		23.30	.687		310	31.50		341.50	390
4720	36" wide		22.70	.705		340	32.50		372.50	425
5000	30" high, one door, 12" wide		22	.727		207	33.50		240.50	279
5040	18" wide		20.90	.766		254	35		289	335
5060	24" wide		20.30	.788		296	36		332	380
5300	Two doors, 27" wide		19.80	.808		325	37		362	410
5340	36" wide		18.80	.851		395	39		434	490
5380	48" wide		18.40	.870		480	40		520	590
6000	Corner wall, 30" high, 24" wide		18	.889		340	41		381	440
6050	30" wide		17.20	.930		360	42.50		402.50	465
6100	36" wide		16.50	.970		410	44.50		454.50	520
6500	Revolving Lazy Susan		15.20	1.053		460	48.50		508.50	580
7000	Broom cabinet, 84" high, 24" deep, 18" wide		10	1.600		625	73.50		698.50	800
7500	Oven cabinets, 84" high, 24" deep, 27" wide		8	2	▼	960	91.50		1,051.50	1,200
7750	Valance board trim		396	.040	L.F.	13	1.85		14.85	17.15
7780	Toe kick trim	1 Carp	256	.031	"	2.79	1.43		4.22	5.30
7790	Base cabinet corner filler		16	.500	Ea.	41.50	23		64.50	81
7800	Cabinet filler, 3" x 24"		20	.400		18.05	18.35		36.40	48.50
7810	3" x 30"		20	.400		22.50	18.35		40.85	53.50
7820	3" x 42"		18	.444		31.50	20.50		52	66
7830	3" x 80"		16	.500	▼	60	23		83	102
7850	Cabinet panel	▼	50	.160	S.F.	8.35	7.35		15.70	20.50
9000	For deluxe models of all cabinets, add					40%				
9500	For custom built in place, add					25%	10%			
9558	Rule of thumb, kitchen cabinets not including									
9560	appliances & counter top, minimum	2 Carp	30	.533	L.F.	168	24.50		192.50	223
9600	Maximum	"	25	.640	"	380	29.50		409.50	460
9610	For metal cabinets, see Section 12 35 70.13									

12 32 23.15 Manufactured Wood Casework Frames

0010	MANUFACTURED WOOD CASEWORK FRAMES									
0050	Base cabinets, counter storage, 36" high									
0100	One bay, 18" wide	1 Carp	2.70	2.963	Ea.	164	136		300	390
0400	Two bay, 36" wide		2.20	3.636		250	167		417	530
1100	Three bay, 54" wide		1.50	5.333		298	245		543	700
2800	Backcases, one bay, 7' high, 18" wide		2.40	3.333		193	153		346	450
3500	Two bay, 36" wide		1.60	5		280	229		509	665
4100	Three bay, 54" wide		1.20	6.667		465	305		770	980
5100	Coat racks, one bay, 7' high, 24" wide		4.50	1.778		192	81.50		273.50	335

12 32 Manufactured Wood Casework

12 32 23 – Hardwood Casework

12 32 23.15 Manufactured Wood Casework Frames		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5300	Two bay, 48" wide	1 Carp	2.75	2.909	Ea.	268	133		401	500
5800	Three bay, 72" wide		2.10	3.810		395	175		570	705
6100	Wall mounted cabinet, one bay, 24" high, 18" wide		3.60	2.222		106	102		208	273
6800	Two bay, 36" wide		2.20	3.636		154	167		321	425
7400	Three bay, 54" wide		1.70	4.706		192	216		408	545
8400	30" high, one bay, 18" wide		3.60	2.222		115	102		217	283
9000	Two bay, 36" wide		2.15	3.721		153	171		324	430
9400	Three bay, 54" wide		1.60	5		191	229		420	565
9800	Wardrobe, 7' high, single, 24" wide		2.70	2.963		212	136		348	445
9880	Partition & adjustable shelves, 48" wide		1.70	4.706		270	216		486	630
9950	Partition, adjustable shelves & drawers, 48" wide		1.40	5.714		405	262		667	850

12 32 23.20 Manufactured Hardwood Casework Doors

0010 MANUFACTURED HARDWOOD CASEWORK DOORS										
2000	Glass panel, hardwood frame									
2200	12" wide, 18" high	1 Carp	34	.235	Ea.	25.50	10.80		36.30	44.50
2600	30" high		32	.250		42.50	11.45		53.95	64.50
4450	18" wide, 18" high		32	.250		38.50	11.45		49.95	59.50
4550	30" high	▼	29	.276	▼	64	12.65		76.65	89.50
5000	Hardwood, raised panel									
5100	12" wide, 18" high	1 Carp	16	.500	Ea.	28.50	23		51.50	67
5200	30" high		15	.533		47.50	24.50		72	90
5500	18" wide, 18" high		15	.533		43	24.50		67.50	84.50
5600	30" high		14	.571	▼	71.50	26		97.50	119

12 32 23.25 Manufactured Wood Casework Drawer Fronts

0010 MANUFACTURED WOOD CASEWORK DRAWER FRONTS										
0100	Solid hardwood front									
1000	4" high, 12" wide	1 Carp	17	.471	Ea.	4.33	21.50		25.83	38.50
1200	18" wide	"	16	.500	"	6.50	23		29.50	42.50

12 32 23.30 Manufactured Wood Casework Vanities

0010 MANUFACTURED WOOD CASEWORK VANITIES										
8000	Vanity bases, 2 doors, 30" high, 21" deep, 24" wide	2 Carp	20	.800	Ea.	297	36.50		333.50	380
8050	30" wide		16	1		355	46		401	460
8100	36" wide		13.33	1.200		345	55		400	465
8150	48" wide	▼	11.43	1.400		450	64		514	595
9000	For deluxe models of all vanities, add to above					40%				
9500	For custom built in place, add to above				▼	25%	10%			

12 32 23.35 Manufactured Wood Casework Hardware

0010 MANUFACTURED WOOD CASEWORK HARDWARE										
1000	Catches, minimum	1 Carp	235	.034	Ea.	1.17	1.56		2.73	3.70
1040	Maximum	"	80	.100	"	7.20	4.59		11.79	15.05
2000	Door/drawer pulls, handles									
2200	Handles and pulls, projecting, metal, minimum	1 Carp	48	.167	Ea.	4.80	7.65		12.45	17.10
2240	Maximum		36	.222		10.15	10.20		20.35	27
2300	Wood, minimum		48	.167		5.05	7.65		12.70	17.35
2340	Maximum		36	.222		9.25	10.20		19.45	26
2600	Flush, metal, minimum		48	.167		5.05	7.65		12.70	17.35
2640	Maximum		36	.222	▼	9.25	10.20		19.45	26
3000	Drawer tracks/glides, minimum		48	.167	Pr.	8.55	7.65		16.20	21
3040	Maximum		24	.333		25	15.30		40.30	51
4000	Cabinet hinges, minimum		160	.050		2.90	2.29		5.19	6.75
4040	Maximum	▼	68	.118	▼	11	5.40		16.40	20.50

12 35 Specialty Casework

12 35 50 – Educational/Library Casework

12 35 50.13 Educational Casework

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	EDUCATIONAL CASEWORK									
5000	School, 24" deep, metal, 84" high units	2 Carp	15	1.067	L.F.	420	49		469	535
5150	Counter height units		20	.800		282	36.50		318.50	365
5450	Wood, custom fabricated, 32" high counter		20	.800		235	36.50		271.50	315
5600	Add for counter top		56	.286		25	13.10		38.10	47.50
5800	84" high wall units	▼	15	1.067	▼	455	49		504	575
6000	Laminated plastic finish is same price as wood									

12 35 53 – Laboratory Casework

12 35 53.13 Metal Laboratory Casework

0010	METAL LABORATORY CASEWORK									
0020	Cabinets, base, door units, metal	2 Carp	18	.889	L.F.	228	41		269	315
0300	Drawer units		18	.889		505	41		546	625
0700	Tall storage cabinets, open, 7' high		20	.800		485	36.50		521.50	590
0900	With glazed doors		20	.800		735	36.50		771.50	860
1300	Wall cabinets, metal, 12-1/2" deep, open		20	.800		164	36.50		200.50	238
1500	With doors	▼	20	.800	▼	340	36.50		376.50	430
6300	Rule of thumb: lab furniture including installation & connection									
6320	High school				S.F.				35	39
6340	College								52	57
6360	Clinical, health care								45	49.50
6380	Industrial								72.50	79.50

12 35 59 – Display Casework

12 35 59.10 Display Cases

0010	DISPLAY CASES Free standing, all glass									
0020	Aluminum frame, 42" high x 36" x 12" deep	2 Carp	8	2	Ea.	1,225	91.50		1,316.50	1,475
0100	70" high x 48" x 18" deep	"	6	2.667		3,725	122		3,847	4,300
0500	For wood bases, add					9%				
0600	For hardwood frames, deduct					8%				
0700	For bronze, baked enamel finish, add				▼	10%				
2000	Wall mounted, glass front, aluminum frame									
2010	Non-illuminated, one section 3' x 4' x 1'-4"	2 Carp	5	3.200	Ea.	2,150	147		2,297	2,575
2100	5' x 4' x 1'-4"		5	3.200		2,475	147		2,622	2,950
2200	6' x 4' x 1'-4"		4	4		2,975	183		3,158	3,550
2500	Two sections, 8' x 4' x 1'-4"		2	8		2,175	365		2,540	2,975
2600	10' x 4' x 1'-4"		2	8		2,675	365		3,040	3,500
3000	Three sections, 16' x 4' x 1'-4"	▼	1.50	10.667	▼	4,050	490		4,540	5,200
3500	For fluorescent lights, add				Section	330			330	365
4000	Table exhibit cases, 2' wide, 3' high, 4' long, flat top	2 Carp	5	3.200	Ea.	1,375	147		1,522	1,725
4100	3' wide, 3' high, 4' long, sloping top	"	3	5.333	"	810	245		1,055	1,275

12 35 70 – Healthcare Casework

12 35 70.13 Hospital Casework

0010	HOSPITAL CASEWORK									
0500	Base cabinets, laminated plastic	2 Carp	10	1.600	L.F.	269	73.50		342.50	410
1000	Stainless steel	"	10	1.600		495	73.50		568.50	660
1200	For all drawers, add					28			28	31
1300	Cabinet base trim, 4" high, enameled steel	2 Carp	200	.080		45	3.67		48.67	55
1400	Stainless steel		200	.080		90.50	3.67		94.17	105
1450	Countertop, laminated plastic, no backsplash		40	.400		46.50	18.35		64.85	79.50
1650	With backsplash		40	.400	▼	58	18.35		76.35	92
1800	For sink cutout, add		12.20	1.311	Ea.		60		60	93
1900	Stainless steel counter top	▼	40	.400	L.F.	150	18.35		168.35	194

12 35 Specialty Casework

12 35 70 – Healthcare Casework

12 35 70.13 Hospital Casework		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2000	Far drop-in stainless 43" x 21" sink, add				Ea.	990			990	1,100
2500	Wall cabinets, laminated plastic	2 Corp	15	1.067	L.F.	202	49		251	298
2600	Enameled steel		15	1.067		248	49		297	350
2700	Stainless steel		15	1.067		495	49		544	615

12 35 70.16 Nurse Station Casework

0010 NURSE STATION CASEWORK										
2100	Door type, laminated plastic	2 Corp	10	1.600	L.F.	310	73.50		383.50	460
2200	Enameled steel		10	1.600		298	73.50		371.50	445
2300	Stainless steel		10	1.600		595	73.50		668.50	770
2400	Far drawer type, add					253			253	279

12 35 80 – Commercial Kitchen Casework

12 35 80.13 Metal Kitchen Casework

0010 METAL KITCHEN CASEWORK										
3500	Base cabinets, metal, minimum	2 Corp	30	.533	L.F.	72.50	24.50		97	118
3600	Maximum		25	.640		184	29.50		213.50	249
3700	Wall cabinets, metal, minimum		30	.533		72.50	24.50		97	118
3800	Maximum		25	.640		167	29.50		196.50	229

12 36 Countertops

12 36 16 – Metal Countertops

12 36 16.10 Stainless Steel Countertops

0010 STAINLESS STEEL COUNTERTOPS										
3200	Stainless steel, custom	1 Corp	24	.333	S.F.	150	15.30		165.30	189

12 36 19 – Wood Countertops

12 36 19.10 Maple Countertops

0010 MAPLE COUNTERTOPS										
2900	Solid, laminated, 1-1/2" thick, no splash	1 Corp	28	.286	L.F.	74	13.10		87.10	102
3000	With square splash		28	.286	"	88	13.10		101.10	117
3400	Recessed cutting block with trim, 16" x 20" x 1"		8	1	Ea.	90	46		136	170

12 36 23 – Plastic Countertops

12 36 23.13 Plastic-Laminate-Clad Countertops

0010 PLASTIC-LAMINATE-CLAD COUNTERTOPS										
0020	Stack, 24" wide w/backsplash, minimum	1 Corp	30	.267	L.F.	16.65	12.25		28.90	37
0100	Maximum		25	.320		34	14.65		48.65	59.50
0300	Custom plastic, 7/8" thick, aluminum malding, no splash		30	.267		29.50	12.25		41.75	51.50
0400	Cave splash		30	.267		28.50	12.25		40.75	50.50
0600	1-1/4" thick, no splash		28	.286		34.50	13.10		47.60	58
0700	Square splash		28	.286		41.50	13.10		54.60	65.50
0900	Square edge, plastic face, 7/8" thick, no splash		30	.267		32.50	12.25		44.75	55
1000	With splash		30	.267		38.50	12.25		50.75	61.50
1200	Far stainless channel edge, 7/8" thick, add					3.06			3.06	3.37
1300	1-1/4" thick, add					3.65			3.65	4.02
1500	Far solid color suede finish, add					4			4	4.40
1700	Far end splash, add				Ea.	18			18	19.80
1900	Far cut outs, standard, add, minimum	1 Corp	32	.250		12	11.45		23.45	31
2000	Maximum		8	1		6	46		52	77.50
2100	Pastfarmed, including backsplash and front edge		30	.267	L.F.	10	12.25		22.25	30
2110	Mitred, add		12	.667	Ea.		30.50		30.50	47
2200	Built-in place, 25" wide, plastic laminate		25	.320	L.F.	40.50	14.65		55.15	67

12 36 Countertops

12 36 33 – Tile Countertops

12 36 33.10 Ceramic Tile Countertops

		Crew	Daily Output	Labar- Hours	Unit	Material	2014 Bare Costs Labar	Equipment	Total	Total Incl O&P
0010	CERAMIC TILE COUNTERTOPS									
2300	Ceramic tile masaic	1 Carp	25	.320	L.F.	33	14.65		47.65	59

12 36 40 – Stone Countertops

12 36 40.10 Natural Stone Countertops

0010	NATURAL STONE COUNTERTOPS									
2500	Marble, stack, with splash, 1/2" thick, minimum	1 Bric	17	.471	L.F.	41	21.50		62.50	77.50
2700	3/4" thick, maximum		13	.615		103	28		131	156
2800	Granite, average, 1-1/4" thick, 24" wide, na splash		13.01	.615		135	28		163	192

12 36 53 – Laboratory Countertops

12 36 53.10 Laboratory Countertops and Sinks

0010	LABORATORY COUNTERTOPS AND SINKS									
0020	Cauntertops, not incl. base cabinets, acid-proof, minimum	2 Corp	82	.195	S.F.	40	8.95		48.95	58
0030	Maximum		70	.229		49.50	10.50		60	70.50
0040	Stainless steel		82	.195		129	8.95		137.95	156

12 36 61 – Simulated Stone Countertops

12 36 61.16 Solid Surface Countertops

0010	SOLID SURFACE COUNTERTOPS , Acrylic palymer									
0020	Pricing far orders of 100 L.F. or greater									
0100	25" wide, solid calars	2 Corp	28	.571	L.F.	53.50	26		79.50	99.50
0200	Patterned colors		28	.571		68	26		94	115
0300	Premium potterned colors		28	.571		85	26		111	134
0400	With silicane ottoched 4" backsplosh, solid colors		27	.593		58.50	27		85.50	107
0500	Patterned calars		27	.593		74.50	27		101.50	124
0600	Premium patterned calars		27	.593		92.50	27		119.50	144
0700	With hard seam attached 4" backsplosh, solid calars		23	.696		58.50	32		90.50	114
0800	Patterned calars		23	.696		74.50	32		106.50	131
0900	Premium patterned calars		23	.696		92.50	32		124.50	151
1000	Pricing far order of 51 – 99 L.F.									
1100	25" wide, solid calars	2 Corp	24	.667	L.F.	61.50	30.50		92	115
1200	Patterned colors		24	.667		78	30.50		108.50	133
1300	Premium patterned calars		24	.667		97.50	30.50		128	154
1400	With silicane ottoched 4" backsplosh, solid calars		23	.696		67.50	32		99.50	124
1500	Patterned colors		23	.696		85.50	32		117.50	143
1600	Premium potterned colors		23	.696		107	32		139	166
1700	With hord seam attached 4" backsplosh, solid colors		20	.800		67.50	36.50		104	131
1800	Potterned calars		20	.800		85.50	36.50		122	151
1900	Premium potterned calars	▼	20	.800	▼	107	36.50		143.50	174
2000	Pricing for order of 1 – 50 L.F.									
2100	25" wide, solid calars	2 Corp	20	.800	L.F.	72.50	36.50		109	136
2200	Patterned colors		20	.800		91.50	36.50		128	158
2300	Premium patterned calars		20	.800		115	36.50		151.50	183
2400	With silicane ottoched 4" backsplosh, solid calars		19	.842		79.50	38.50		118	147
2500	Patterned calars		19	.842		100	38.50		138.50	170
2600	Premium patterned colors		19	.842		125	38.50		163.50	198
2700	With hard seam attached 4" backsplosh, solid calars		15	1.067		79.50	49		128.50	163
2800	Patterned calars		15	1.067		100	49		149	186
2900	Premium patterned calars	▼	15	1.067	▼	125	49		174	214
3000	Sinks, pricing far order of 100 or greater units									
3100	Single bowl, hard seamed, solid colors, 13" x 17"	1 Corp	3	2.667	Ea.	360	122		482	590
3200	10" x 15"		7	1.143		167	52.50		219.50	265

12 36 Countertops

12 36 61 – Simulated Stone Countertops

12 36 61.16 Solid Surface Countertops

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
3300	Cutouts for sinks	1 Corp	8	1	Ea.		46		46	71
3400	Sinks, pricing for order of 51 – 99 units									
3500	Single bowl, hard seamed, solid colors, 13" x 17"	1 Corp	2.55	3.137	Ea.	415	144		559	675
3600	10" x 15"		6	1.333		192	61		253	305
3700	Cutouts for sinks		7	1.143			52.50		52.50	81
3800	Sinks, pricing for order of 1 – 50 units									
3900	Single bowl, hard seamed, solid colors, 13" x 17"	1 Corp	2	4	Ea.	490	183		673	820
4000	10" x 15"		4.55	1.758		226	80.50		306.50	370
4100	Cutouts for sinks		5.25	1.524			70		70	108
4200	Coaktap cutouts, pricing for 100 or greater units		4	2		26.50	91.50		118	172
4300	51 – 99 units		3.40	2.353		30.50	108		138.50	200
4400	1 – 50 units		3	2.667		36	122		158	229

12 36 61.17 Solid Surface Vanity Tops

0010	SOLID SURFACE VANITY TOPS									
0015	Solid surface, center bowl, 17" x 19"	1 Corp	12	.667	Ea.	186	30.50		216.50	252
0020	19" x 25"		12	.667		190	30.50		220.50	256
0030	19" x 31"		12	.667		223	30.50		253.50	292
0040	19" x 37"		12	.667		259	30.50		289.50	330
0050	22" x 25"		10	.800		340	36.50		376.50	430
0060	22" x 31"		10	.800		395	36.50		431.50	490
0070	22" x 37"		10	.800		460	36.50		496.50	565
0080	22" x 43"		10	.800		525	36.50		561.50	635
0090	22" x 49"		10	.800		585	36.50		621.50	695
0110	22" x 55"		8	1		660	46		706	800
0120	22" x 61"		8	1		755	46		801	900
0220	Double bowl, 22" x 61"		8	1		855	46		901	1,000
0230	Double bowl, 22" x 73"		8	1		930	46		976	1,100
0240	For aggregate colors, add					35%				
0250	For faucets and fittings, see Section 22 41 39.10									

12 36 61.19 Quartz Agglomerate Countertops

0010	QUARTZ AGGLOMERATE COUNTERTOPS									
0100	25" wide, 4" backsplash, color group A, minimum	2 Corp	15	1.067	L.F.	63	49		112	145
0110	Maximum		15	1.067		88.50	49		137.50	173
0120	Color group B, minimum		15	1.067		65.50	49		114.50	148
0130	Maximum		15	1.067		92.50	49		141.50	178
0140	Color group C, minimum		15	1.067		76.50	49		125.50	160
0150	Maximum		15	1.067		105	49		154	191
0160	Color group D, minimum		15	1.067		83	49		132	167
0170	Maximum		15	1.067		112	49		161	200

12 46 Furnishing Accessories

12 46 13 – Ash Receptacles

12 46 13.10 Ash/Trash Receivers

0010	ASH/TRASH RECEIVERS									
1000	Ash urn, cylindrical metal									
1020	8" diameter, 20" high	1 Clab	60	.133	Ea.	155	4.89		159.89	178
1060	10" diameter, 26" high	"	60	.133	"	124	4.89		128.89	144
2000	Combination ash/trash urn, metal									
2020	8" diameter, 20" high	1 Clab	60	.133	Ea.	155	4.89		159.89	178
2050	10" diameter, 26" high	"	60	.133	"	124	4.89		128.89	144

12 46 Furnishing Accessories

12 46 19 – Clocks

12 46 19.50 Wall Clocks

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WALL CLOCKS									
0080	12" diameter, single face	1 Elec	8	1	Ea.	128	53.50		181.50	220
0100	Double face	"	6.20	1.290	"	294	69		363	430

12 46 33 – Waste Receptacles

12 46 33.13 Trash Receptacles

0010	TRASH RECEPTACLES									
4000	Trash receptacle, metal									
4020	8" diameter, 15" high	1 Clab	60	.133	Ea.	72	4.89		76.89	86.50
4040	10" diameter, 18" high		60	.133		135	4.89		139.89	156
5040	16" x 8" x 14" high	▼	60	.133	▼	25.50	4.89		30.39	35.50
5500	Plastic, with lid									
5520	35 gallon	1 Clab	60	.133	Ea.	135	4.89		139.89	156
5540	45 gallon		60	.133		217	4.89		221.89	247
5550	Plastic recycling barrel, w/lid & wheels, 32 gal.	G	60	.133		83	4.89		87.89	99
5560	65 gal.	G	60	.133		535	4.89		539.89	595
5570	95 gal.	G	60	.133		995	4.89		999.89	1,100

12 48 Rugs and Mats

12 48 13 – Entrance Floor Mats and Frames

12 48 13.13 Entrance Floor Mats

0010	ENTRANCE FLOOR MATS									
0020	Recessed, in-laid black rubber, 3/8" thick, solid	1 Clab	155	.052	S.F.	25.50	1.89		27.39	31
0050	Perforated		155	.052		15.80	1.89		17.69	20.50
0100	1/2" thick, solid		155	.052		19	1.89		20.89	24
0150	Perforated		155	.052		23	1.89		24.89	28
0200	In colors, 3/8" thick, solid		155	.052		20.50	1.89		22.39	25.50
0250	Perforated		155	.052		21	1.89		22.89	26.50
0300	1/2" thick, solid		155	.052		26.50	1.89		28.39	32
0350	Perforated		155	.052		27	1.89		28.89	33
2000	Recycled rubber tire tile, 12" x 12" x 3/8" thick	G	125	.064		9.90	2.35		12.25	14.50
2510	Natural cocoa fiber, 1/2" thick	G	125	.064		8.20	2.35		10.55	12.60
2520	3/4" thick	G	125	.064		6.80	2.35		9.15	11.05
2530	1" thick	G	125	.064	▼	9.40	2.35		11.75	13.95

12 51 Office Furniture

12 51 16 – Case Goods

12 51 16.13 Metal Case Goods

0010	METAL CASE GOODS									
0020	Desks, 29" high, double pedestal, 30" x 60", metal, minimum				Ea.	580			580	635
0030	Maximum					1,475			1,475	1,625
0600	Desks, single pedestal, 30" x 60", metal, minimum					540			540	595
0620	Maximum					1,200			1,200	1,325
0720	Desks, secretarial, 30" x 60", metal, minimum					470			470	520
0730	Maximum					830			830	910
0740	Return, 20" x 42", minimum					350			350	385
0750	Maximum					540			540	595
0940	59" x 12" x 23" high, steel, minimum					300			300	330
0960	Maximum					380			380	420

12 51 Office Furniture

12 51 16 – Case Goods

12 51 16.16 Wood Case Goods				Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WOOD CASE GOODS											
0150	Desk, 29" high, double pedestal, 30" x 60"											
0160	Wood, minimum						Eo.	840			840	925
0180	Maximum						"	2,875			2,875	3,175
0630	Single pedestal, 30" x 60"											
0640	Wood, minimum						Eo.	595			595	655
0650	Maximum							900			900	990
0670	Executive return, 24" x 42", with box, file, wood, minimum											
0680	Maximum							900			900	990
0790	Desk, 29" high, secretorial, 30" x 60"											
0800	Wood, minimum						Eo.	485			485	535
0810	Maximum							2,925			2,925	3,200
0820	Return, 20" x 42", minimum											
0830	Maximum							1,100			1,100	1,225
0900	Desktop organizer, 72" x 14" x 36" high, wood, minimum											
0920	Maximum						▼	455			455	500
1110	Furniture, credenza, 29" high, 18" to 22" x 60" to 72"											
1120	Wood, minimum						Eo.	685			685	755
1140	Maximum						"	2,575			2,575	2,850

12 51 23 – Office Tables

12 51 23.33 Conference Tables												
0010	CONFERENCE TABLES											
6050	Boat, 96" x 42", minimum						Eo.	780			780	855
6150	Maximum							3,575			3,575	3,925
6720	Rectangle, 96" x 42", minimum											
6740	Maximum						▼	3,575			3,575	3,925

12 52 Seating

12 52 23 – Office Seating

12 52 23.13 Office Chairs												
0010	OFFICE CHAIRS											
2000	Standard office chair, executive, minimum						Eo.	320			320	355
2150	Maximum							2,050			2,050	2,275
2200	Management, minimum											
2250	Maximum							2,175			2,175	2,400
2280	Task, minimum											
2290	Maximum							550			550	605
2300	Arm kit, minimum											
2320	Maximum							123			123	135

12 54 Hospitality Furniture

12 54 13 – Hotel and Motel Furniture

12 54 13.10 Hotel Furniture		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
HOTEL FURNITURE							Labor	Equipment		
0010	HOTEL FURNITURE									
0020	Standard quality set, minimum				Room	2,375			2,375	2,600
0200	Maximum				"	8,425			8,425	9,275

12 54 16 – Restaurant Furniture

12 54 16.10 Tables, Folding

0010	TABLES, FOLDING Laminated plastic tops									
1000	Tubular steel legs with glides									
1020	18" x 60", minimum				Ea.	256			256	282
1040	Maximum					1,500			1,500	1,650
1840	36" x 96", minimum					310			310	340
1860	Maximum					3,025			3,025	3,325
2000	Round, wood stained, plywood top, 60" diameter, minimum					238			238	262
2020	Maximum				▼	320			320	350

12 54 16.20 Furniture, Restaurant

0010	FURNITURE, RESTAURANT									
0020	Bars, built-in, front bar	1 Carp	5	1.600	L.F.	274	73.50		347.50	415
0200	Back bar	"	5	1.600	"	199	73.50		272.50	330
0300	Booth seating, see Section 12 54 16.70									
2000	Chair, bentwood side chair, metal, minimum				Ea.	97			97	107
2020	Maximum					114			114	125
2600	Upholstered seat & back, arms, minimum					158			158	174
2620	Maximum				▼	450			450	495

12 54 16.70 Booths

0010	BOOTHES									
1000	Banquet, upholstered seat and back, custom									
1500	Straight, minimum	2 Carp	40	.400	L.F.	193	18.35		211.35	241
1520	Maximum		36	.444		375	20.50		395.50	440
1600	"L" or "U" shape, minimum		35	.457		196	21		217	249
1620	Maximum	▼	30	.533	▼	350	24.50		374.50	425
1800	Upholstered outside finished backs for									
1810	single booths and custom banquets									
1820	Minimum	2 Carp	44	.364	L.F.	22	16.65		38.65	50
1840	Maximum	"	40	.400	"	66.50	18.35		84.85	102
3000	Fixed seating, one piece plastic chair and									
3010	plastic laminate table top									
3100	Two seat, 24" x 24" table, minimum	F-7	30	1.067	Ea.	775	44		819	925
3120	Maximum		26	1.231		1,100	51		1,151	1,300
3200	Four seat, 24" x 48" table, minimum		28	1.143		770	47		817	920
3220	Maximum	▼	24	1.333	▼	1,300	55		1,355	1,525
5000	Mount in floor, wood fiber core with									
5010	plastic laminate face, single booth									
5050	24" wide	F-7	30	1.067	Ea.	298	44		342	395
5100	48" wide	"	28	1.143	"	380	47		427	490

12 55 Detention Furniture

12 55 13 – Detention Bunks

12 55 13.13 Cots

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	COTS									
2500	Balted, single, pointed steel	E-4	20	1.600	Ea.	330	82.50	7.10	419.60	520
2700	Stainless steel	"	20	1.600	"	960	82.50	7.10	1,049.60	1,200

12 56 Institutional Furniture

12 56 33 – Classroom Furniture

12 56 33.10 Furniture, School

0010	FURNITURE, SCHOOL									
0500	Classroom, movable chair & desk type, minimum				Set				73.50	81
0600	Maximum				"				155	171
1000	Chair, molded plastic									
1100	Integral tablet arm, minimum				Ea.	100			100	110
1150	Maximum					182			182	200
2000	Desk, single pedestal, top back compartment, minimum					142			142	156
2020	Maximum					167			167	184
2200	Flip top, minimum					228			228	250
2220	Maximum					276			276	305

12 56 43 – Dormitory Furniture

12 56 43.10 Dormitory Furnishings

0010	DORMITORY FURNISHINGS									
0300	Bunkable bed, twin, minimum				Ea.	370			370	405
0320	Maximum					540			540	595
1000	Chest, four drawer, minimum					355			355	390
1020	Maximum					675			675	745
1050	Built-in, minimum	2 Carp	13	1.231	L.F.	114	56.50		170.50	212
1150	Maximum		10	1.600		211	73.50		284.50	345
1200	Desk top, built-in, laminated plastic, 24" deep, minimum		50	.320		43.50	14.65		58.15	70
1300	Maximum		40	.400		130	18.35		148.35	172
1450	30" deep, minimum		50	.320		55.50	14.65		70.15	83.50
1550	Maximum		40	.400		242	18.35		260.35	296
1750	Dressing unit, built-in, minimum		12	1.333		171	61		232	283
1850	Maximum	▼	8	2	▼	515	91.50		606.50	705
8000	Rule of thumb: total cost for furniture, minimum				Student				2,525	2,800
8050	Maximum				"				4,850	5,350

12 56 51 – Library Furniture

12 56 51.10 Library Furnishings

0010	LIBRARY FURNISHINGS									
0100	Attendant desk, 36" x 62" x 29" high	1 Carp	16	.500	Ea.	1,825	23		1,848	2,050
0200	Back display, "A" frame display, both sides, 42" x 42" x 60" high		16	.500		1,125	23		1,148	1,275
0220	Table with bulletin board, 42" x 24" x 49" high		16	.500		735	23		758	840
0800	Card catalogue, 30 tray unit		16	.500		2,950	23		2,973	3,250
0840	60 tray unit	▼	16	.500		5,625	23		5,648	6,225
0880	72 tray unit	2 Carp	16	1		8,000	46		8,046	8,875
1000	Correls, single face, initial unit	1 Carp	16	.500		800	23		823	915
1500	Double face, initial unit	2 Carp	16	1		1,125	46		1,171	1,300
1710	Correls, hardwood, 36" x 24", minimum	1 Carp	5	1.600		765	73.50		838.50	960
1720	Maximum	"	4	2		1,950	91.50		2,041.50	2,300
2700	Card catalog file, 60 trays, complete					7,775			7,775	8,550
2720	Alternate method: each tray				▼	129			129	142
3800	Charging desk, built-in, with counter, plastic laminated top	1 Carp	7	1.143	L.F.	298	52.50		350.50	410

12 56 Institutional Furniture

12 56 51 – Library Furniture

12 56 51.10 Library Furnishings		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4000	Dictionary stand, stationery	1 Corp	16	.500	Ea.	750	23		773	860
4020	Revolving		16	.500		211	23		234	268
4200	Exhibit case, table style, 60" x 28" x 36"		11	.727		2,775	33.50		2,808.50	3,100
6010	Bookshelf, metal, 90" high, 10" shelf, double face		11.50	.696	L.F.	150	32		182	214
6020	Single face		12	.667	"	121	30.50		151.50	180
6050	For 8" shelving, subtract from above					10%				
6060	For 12" shelving, odd to above					10%				
6070	For 42" high with countertop, subtract from above					20%				
6100	Mobile compacted shelving, hand crank, 9'-0" high									
6110	Double face, including track, 3' section				Ea.	1,150			1,150	1,250
6150	For electrical operation, odd					25%				
6200	Mogazine shelving, 82" high, 12" deep, single face	1 Corp	11.50	.696	L.F.	148	32		180	212
6210	Double face	"	11.50	.696	"	243	32		275	315
7200	Reading table, laminated top, 60" x 36"				Ea.	690			690	760

12 56 70 – Healthcare Furniture

12 56 70.10 Furniture, Hospital

0010	FURNITURE, HOSPITAL									
0020	Beds, manual, minimum				Ea.	785			785	865
0100	Maximum					2,500			2,500	2,750
0600	All electric hospital beds, minimum					1,600			1,600	1,775
0700	Maximum					4,400			4,400	4,850
0900	Manual, nursing home beds, minimum					755			755	830
1000	Maximum					2,150			2,150	2,375
1020	Overbed table, laminated top, minimum					450			450	495
1040	Maximum					870			870	955
1100	Patient wall systems, not incl. plumbing, minimum				Room	1,400			1,400	1,550
1200	Maximum				"	1,900			1,900	2,100
2000	Geriatric chairs, minimum				Ea.	430			430	470
2020	Maximum				"	750			750	825

12 61 Fixed Audience Seating

12 61 13 – Upholstered Audience Seating

12 61 13.13 Auditorium Chairs

0010	AUDITORIUM CHAIRS									
2000	All veneer construction	2 Corp	22	.727	Ea.	227	33.50		260.50	300
2200	Veneer back, padded seat		22	.727		237	33.50		270.50	315
2350	Fully upholstered, spring seat		22	.727		237	33.50		270.50	315
2450	For tablet arms, odd					66.50			66.50	73
2500	For fire retardancy, CATB-133, odd					29.50			29.50	32.50

12 61 13.23 Lecture Hall Seating

0010	LECTURE HALL SEATING									
1000	Pedestal type, minimum	2 Corp	22	.727	Ea.	187	33.50		220.50	258
1200	Maximum	"	14.50	1.103	"	480	50.50		530.50	610

12 63 Stadium and Arena Seating

12 63 13 – Stadium and Arena Bench Seating

12 63 13.13 Bleachers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	BLEACHERS									
3000	Telescoping, monoul to 15 tier, minimum	F-5	65	.492	Seat	90.50	23		113.50	135
3100	Maximum		60	.533		136	24.50		160.50	187
3300	16 to 20 tier, minimum		60	.533		217	24.50		241.50	277
3400	Maximum		55	.582		271	27		298	340
3600	21 to 30 tier, minimum		50	.640		226	29.50		255.50	295
3700	Maximum	▼	40	.800		299	37		336	385
3900	For integral power operation, odd, minimum	2 Elec	300	.053		45	2.85		47.85	54.50
4000	Maximum	"	250	.064	▼	72.50	3.41		75.91	84.50
5000	Benches, folding, in wall, 14' table, 2 benches	L-4	2	12	Set	765	515		1,280	1,650

12 67 Pews and Benches

12 67 13 – Pews

12 67 13.13 Sanctuary Pews

0010	SANCTUARY PEWS									
1500	Bench type, hordwood, minimum	1 Corp	20	.400	L.F.	93.50	18.35		111.85	132
1550	Maximum	"	15	.533		185	24.50		209.50	242
1570	For kneeler, odd				▼	22			22	24.50

12 92 Interior Planters and Artificial Plants

12 92 33 – Interior Planters

12 92 33.10 Planters

0010	PLANTERS									
1000	Fiberglass, hanging, 12" diameter, 7" high				Eo.	115			115	127
1500	Rectongulor, 48" long, 16" high x 15" wide					655			655	720
1650	60" long, 30" high, 28" wide					995			995	1,100
2000	Round, 12" diometer, 13" high					152			152	168
2050	25" high					199			199	219
5000	Square, 10" side, 20" high					189			189	208
5100	14" side, 15" high					229			229	252
6000	Metol bowl, 32" diometer, 8" high, minimum					545			545	600
6050	Maximum					740			740	810
8750	Wood, fiberglass liner, square									
8780	14" square, 15" high, minimum				Eo.	445			445	490
8800	Maximum					550			550	605
9400	Plostic cylinder, molded, 10" diometer, 10" high					18.05			18.05	19.90
9500	11" diometer, 11" high				▼	34.50			34.50	38

12 93 Site Furnishings

12 93 23 – Trash and Litter Receptacles

12 93 23.10 Trash Receptacles		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	TRASH RECEPTACLES									
0020	Fiberglass, 2' square, 18" high	2 Clob	30	.533	Ea.	550	19.55		569.55	635
0100	2' square, 2'-6" high		30	.533		780	19.55		799.55	885
0300	Circular, 2' diameter, 18" high		30	.533		465	19.55		484.55	540
0400	2' diameter, 2'-6" high		30	.533		520	19.55		539.55	600
0500	Recycled plastic, var colors, round, 32 gal., 28" x 38" H	G	5	3.200		500	117		617	730
0510	32 gal., 31" x 32" H	G	5	3.200		575	117		692	810

12 93 23.20 Trash Closure

0010	TRASH CLOSURE									
0020	Steel with pullaver cover, 2'-3" wide, 4'-7" high, 6'-2" long	2 Clob	5	3.200	Ea.	1,925	117		2,042	2,275
0100	10'-1" long		4	4		2,375	147		2,522	2,850
0300	Wood, 10' wide, 6' high, 10' long		1.20	13.333		1,725	490		2,215	2,625

12 93 33 – Manufactured Planters

12 93 33.10 Planters

0010	PLANTERS									
0012	Concrete, sandblasted, precast, 48" diameter, 24" high	2 Clob	15	1.067	Ea.	620	39		659	740
0100	Fluted, precast, 7' diameter, 36" high		10	1.600		1,550	58.50		1,608.50	1,800
0300	Fiberglass, circular, 36" diameter, 24" high		15	1.067		710	39		749	840
0320	36" diameter, 27" high		12	1.333		710	49		759	855
0330	33" high		15	1.067		755	39		794	890
0335	24" diameter, 36" high		15	1.067		415	39		454	520
0340	60" diameter, 39" high		8	2		1,250	73.50		1,323.50	1,500
0400	60" diameter, 24" high		10	1.600		1,100	58.50		1,158.50	1,300
0600	Square, 24" side, 36" high		15	1.067		605	39		644	730
0610	24" side, 27" high		12	1.333		660	49		709	805
0620	24" side, 16" high		20	.800		315	29.50		344.50	390
0700	48" side, 36" high		15	1.067		995	39		1,034	1,150
0900	Planter/bench, 72" square, 36" high		5	3.200		1,750	117		1,867	2,100
1000	96" square, 27" high		5	3.200		2,175	117		2,292	2,575
1200	Wood, square, 48" side, 24" high		15	1.067		1,375	39		1,414	1,575
1300	Circular, 48" diameter, 30" high		10	1.600		965	58.50		1,023.50	1,150
1500	72" diameter, 30" high		10	1.600		1,700	58.50		1,758.50	1,975
1600	Planter/bench, 72"		5	3.200		3,225	117		3,342	3,700

12 93 43 – Site Seating and Tables

12 93 43.13 Site Seating

0010	SITE SEATING									
0012	Seating, benches, park, precast conc., w/back, wood rails, 4' long	2 Clob	5	3.200	Ea.	580	117		697	815
0100	8' long		4	4		935	147		1,082	1,250
0300	Fiberglass, without back, one piece, 4' long		10	1.600		605	58.50		663.50	760
0400	8' long		7	2.286		780	84		864	990
0500	Steel barstock pedestals w/backs, 2" x 3" wood rails, 4' long		10	1.600		1,100	58.50		1,158.50	1,300
0510	8' long		7	2.286		1,400	84		1,484	1,675
0520	3" x 8" wood plank, 4' long		10	1.600		1,175	58.50		1,233.50	1,400
0530	8' long		7	2.286		1,450	84		1,534	1,725
0540	Backless, 4" x 4" wood plank, 4' square		10	1.600		920	58.50		978.50	1,125
0550	8' long		7	2.286		990	84		1,074	1,225
0600	Aluminum pedestals, with backs, aluminum slots, 8' long		8	2		470	73.50		543.50	630
0610	15' long		5	3.200		955	117		1,072	1,225
0620	Portable, aluminum slots, 8' long		8	2		455	73.50		528.50	615
0630	15' long		5	3.200		550	117		667	785
0800	Cast iron pedestals, back & arms, wood slots, 4' long		8	2		415	73.50		488.50	575

12 93 Site Furnishings

12 93 43 – Site Seating and Tables

12 93 43.13 Site Seating		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0820	8' long	2 Clob	5	3.200	Ea.	920	117		1,037	1,200
0840	Backless, wood slots, 4' long		8	2		580	73.50		653.50	755
0860	8' long		5	3.200		1,150	117		1,267	1,425
1700	Steel frame, fir seat, 10' long		10	1.600		345	58.50		403.50	465

Estimating Tips

General

- The items and systems in this division are usually estimated, purchased, supplied, and installed as a unit by one or more subcontractors. The estimator must ensure that all parties are operating from the same set of specifications and assumptions, and that all necessary items are estimated and will be provided. Many times the complex items and systems are covered, but the more common ones, such as excavation or a crane, are overlooked for the very reason that everyone assumes nobody could miss them. The estimator should be the central focus and be able to ensure that all systems are complete.
- Another area where problems can develop in this division is at the interface between systems. The estimator must ensure, for instance, that anchor bolts, nuts, and washers are estimated and included for

the air-supported structures and pre-engineered buildings to be bolted to their foundations. Utility supply is a common area where essential items or pieces of equipment can be missed or overlooked due to the fact that each subcontractor may feel it is another's responsibility. The estimator should also be aware of certain items which may be supplied as part of a package but installed by others, and ensure that the installing contractor's estimate includes the cost of installation. Conversely, the estimator must also ensure that items are not costed by two different subcontractors, resulting in an inflated overall estimate.

13 30 00 Special Structures

- The foundations and floor slab, as well as rough mechanical and electrical, should be estimated, as this work is required for the assembly and erection of the structure.

Generally, as noted in the book, the pre-engineered building comes as a shell. Pricing is based on the size and structural design parameters stated in the reference section. Additional features, such as windows and doors with their related structural framing, must also be included by the estimator. Here again, the estimator must have a clear understanding of the scope of each portion of the work and all the necessary interfaces.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

13 05 Common Work Results for Special Construction

13 05 05 – Selective Special Construction Demolition

13 05 05.10 Selective Demolition, Air Supported Structures				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
SELECTIVE DEMOLITION, AIR SUPPORTED STRUCTURES									Labor	Equipment		
0010												
0020	Tonk covers, scrim, dbl. layer, vinyl poly w/hdwe., blower & controls											
0050	Round and rectangular	R024119-10	B-2	9000	.004	S.F.			.16		.16	.25
0100	Warehouse structures											
0120	Poly/vinyl fabric, 28 oz., incl. tension cables & inflation system		4 Clob	9000	.004	SF Flr.			.13		.13	.20
0150	Reinforced vinyl, 12 oz., 3000 S.F.		"	5000	.006				.23		.23	.36
0200	12,000 to 24,000 S.F.		8 Clob	20000	.003				.12		.12	.18
0250	Tedlor vinyl fabric, 28 oz. w/liner, to 3000 S.F.		4 Clob	5000	.006				.23		.23	.36
0300	12,000 to 24,000 S.F.		8 Clob	20000	.003				.12		.12	.18
0350	Greenhouse/shelter, woven polyethylene with liner											
0400	3000 S.F.		4 Clob	5000	.006	SF Flr.			.23		.23	.36
0450	12,000 to 24,000 S.F.		8 Clob	20000	.003				.12		.12	.18
0500	Tennis/gymnasium, poly/vinyl fabric, 28 oz., incl. thermol liner		4 Clob	9000	.004				.13		.13	.20
0600	Stadium/convention center, teflon coated fiberglass, incl. thermol liner		9 Clob	40000	.002				.07		.07	.10
0700	Doors, air lock, 15' long, 10' x 10'		2 Corp	1.50	10.667	Eo.			490		490	755
0720	15' x 15'			.80	20				915		915	1,425
0750	Revolving personnel door, 6' diam. x 6'-6" high			1.50	10.667				490		490	755

13 05 05.20 Selective Demolition, Garden Houses

0010	SELECTIVE DEMOLITION, GARDEN HOUSES	R024119-10										
0020	Prefab, wood, excl foundation, overage		2 Clob	400	.040	SF Flr.			1.47		1.47	2.26

13 05 05.25 Selective Demolition, Geodesic Domes

0010	SELECTIVE DEMOLITION, GEODESIC DOMES											
0050	Shell only, interlocking plywood panels, 30' diameter		F-5	3.20	10	Eo.			465		465	715
0060	34' diameter			2.30	13.913				645		645	995
0070	39' diameter			2	16				740		740	1,150
0080	45' diameter		F-3	2.20	18.182				850	300	1,150	1,625
0090	55' diameter			2	20				935	330	1,265	1,800
0100	60' diameter			2	20				935	330	1,265	1,800
0110	65' diameter			1.60	25				1,175	415	1,590	2,250

13 05 05.30 Selective Demolition, Greenhouses

0010	SELECTIVE DEMOLITION, GREENHOUSES	R024119-10										
0020	Resi-type, free standing, excl. foundations, 9' long x 8' wide		2 Clob	160	.100	SF Flr.			3.67		3.67	5.65
0030	9' long x 11' wide			170	.094				3.45		3.45	5.30
0040	9' long x 14' wide			220	.073				2.67		2.67	4.11
0050	9' long x 17' wide			320	.050				1.83		1.83	2.83
0060	Leon-to type, 4' wide			64	.250				9.15		9.15	14.15
0070	7' wide			120	.133				4.89		4.89	7.55
0080	Geodesic hemisphere, 1/8" plexigloss glazing, 8' diam.			4	4	Eo.			147		147	226
0090	24' diam.			.80	20				735		735	1,125
0100	48' diam.			.40	40				1,475		1,475	2,250

13 05 05.35 Selective Demolition, Hangars

0010	SELECTIVE DEMOLITION, HANGARS											
0020	T type hangars, prefab, steel, golv roof & walls, incl doors, excl fndtn		E-2	2550	.022	SF Flr.			1.10	.60	1.70	2.53
0030	Circular type, prefab, steel frame, plastic skin, incl foundation, 80' diam		"	.50	112	Total			5,625	3,050	8,675	12,900

13 05 05.45 Selective Demolition, Lightning Protection

0010	SELECTIVE DEMOLITION, LIGHTNING PROTECTION											
0020	Air terminal & base, copper, 3/8" diam. x 10", to 75' h		1 Clob	16	.500	Eo.			18.35		18.35	28.50
0030	1/2" diam. x 12", over 75' h			16	.500				18.35		18.35	28.50
0050	Aluminum, 1/2" diam. x 12", to 75' h			16	.500				18.35		18.35	28.50
0060	5/8" diam. x 12", over 75' h			16	.500				18.35		18.35	28.50
0070	Cable, copper, 220 lb. per thousand feet, to 75' high			640	.013	L.F.			.46		.46	.71

13 05 Common Work Results for Special Construction

13 05 05 – Selective Special Construction Demolition

13 05 05.45 Selective Demolition, Lightning Protection		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs			Total Incl O&P
							Labor	Equipment	Total	
0080	375 lb. per thousand feet, over 75' high	1 Clab	460	.017	L.F.		.64		.64	.98
0090	Aluminum, 101 lb. per thousand feet, to 75' high		560	.014			.52		.52	.81
0100	199 lb. per thousand feet, over 75' high		480	.017			.61		.61	.94
0110	Arrester, 175 V AC, to ground		16	.500	Ea.		18.35		18.35	28.50
0120	650 V AC, to ground		13	.615	"		22.50		22.50	35

13 05 05.50 Selective Demolition, Pre-Engineered Steel Buildings

13 05 05.50 SELECTIVE DEMOLITION, PRE-ENGINEERED STEEL BUILDINGS										
0010	Pre-engd. steel bldgs., rigid frame, clear span & multi post, excl. salvage									
0550	3,500 to 7,500 S.F.	L-10	1000	.024	SF Flr.		1.24	.66	1.90	2.81
0600	7,501 to 12,500 S.F.		1500	.016			.82	.44	1.26	1.88
0650	12,500 S.F. or greater	▼	1650	.015	▼		.75	.40	1.15	1.70
0700	Pre-engd. steel building components									
0710	Entrance canopy, including frame 4' x 4'	E-24	8	4	Ea.		202	93	295	450
0720	4' x 8'	"	7	4.571			231	107	338	510
0730	HM doors, self framing, single leaf	2 Skwk	8	2			94.50		94.50	147
0740	Double leaf		5	3.200	▼		151		151	234
0760	Gutter, eave type		600	.027	L.F.		1.26		1.26	1.95
0770	Sash, single slide, double slide or fixed		24	.667	Ea.		31.50		31.50	49
0780	Skylight, fiberglass, to 30 S.F.		16	1			47.50		47.50	73.50
0785	Roof vents, circular, 12" to 24" diameter		12	1.333			63		63	97.50
0790	Continuous, 10' long	▼	8	2	▼		94.50		94.50	147
0900	Shelters, aluminum frame									
0910	Acrylic glazing, 3' x 9' x 8' high	2 Skwk	2	8	Ea.		380		380	585
0920	9' x 12' x 8' high	"	1.50	10.667	"		505		505	780

13 05 05.60 Selective Demolition, Silos

13 05 05.60 SELECTIVE DEMOLITION, SILOS										
0010	Conc stove, indstrl, conical/slaping batt, excl fndtn, 12' diam., 35' h	E-24	.18	177	Ea.		8,975	4,150	13,125	19,900
0030	16' diam., 45' h		.12	266			13,500	6,225	19,725	29,800
0040	25' diam., 75' h		.08	400			20,200	9,325	29,525	44,800
0050	Steel, factory fabricated, 30,000 gal. cap, painted or epoxy lined	L-5	2	28	▼		1,425	375	1,800	2,875

13 05 05.65 Selective Demolition, Sound Control

13 05 05.65 SELECTIVE DEMOLITION, SOUND CONTROL										
0010	R024119-10									
0120	Acaustical enclosure, 4" thick walls & ceiling panels, 8 lb./S.F.	3 Carp	144	.167	SF Surf		7.65		7.65	11.80
0130	10.5 lb./S.F.		128	.188			8.60		8.60	13.25
0140	Reverb chamber, parallel walls, 4" thick		120	.200			9.15		9.15	14.15
0150	Skewed walls, parallel roof, 4" thick		110	.218			10		10	15.45
0160	Skewed walls/roof, 4" layer/air space		96	.250			11.45		11.45	17.70
0170	Sound-absorbing panels, painted metal, 2'-6" x 8', under 1,000 S.F.		430	.056			2.56		2.56	3.95
0180	Over 1,000 S.F.	▼	480	.050			2.29		2.29	3.54
0190	Flexible transparent curtain, clear	3 Shee	430	.056			3.05		3.05	4.66
0192	50% clear, 50% foam		430	.056			3.05		3.05	4.66
0194	25% clear, 75% foam		430	.056			3.05		3.05	4.66
0196	100% foam		430	.056			3.05		3.05	4.66
0200	Audio-masking sys., incl. speakers, amplfr., signal gntr.									
0205	Ceiling mounted, 5,000 S.F.	2 Elec	4800	.003	S.F.		.18		.18	.27
0210	10,000 S.F.		5600	.003			.15		.15	.23
0220	Plenum mounted, 5,000 S.F.		7600	.002			.11		.11	.17
0230	10,000 S.F.		8800	.002	▼		.10		.10	.15

13 05 05.70 Selective Demolition, Special Purpose Rooms

13 05 05.70 SELECTIVE DEMOLITION, SPECIAL PURPOSE ROOMS										
0010	R024119-10									
0100	Audiometric rooms, under 500 S.F. surface	4 Carp	200	.160	SF Surf		7.35		7.35	11.30
0110	Over 500 S.F. surface	"	240	.133	"		6.10		6.10	9.45

13 05 Common Work Results for Special Construction

13 05 05 – Selective Special Construction Demolition

13 05 05.70 Selective Demolition, Special Purpose Rooms		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0200	Clean rooms, 12' x 12' soft wall, class 100	1 Corp	.30	26.667	Ea.		1,225		1,225	1,875
0210	Class 1000		.30	26.667			1,225		1,225	1,875
0220	Class 10,000		.35	22.857			1,050		1,050	1,625
0230	Class 100,000		.35	22.857			1,050		1,050	1,625
0300	Darkrooms, shell complete, 8' high	2 Corp	220	.073	SF Flr.		3.33		3.33	5.15
0310	12' high		110	.145	"		6.65		6.65	10.30
0350	Darkrooms doors, mini-cylindrical, revolving		4	4	Ea.		183		183	283
0400	Music room, practice modular		140	.114	SF Surf		5.25		5.25	8.10
0500	Refrigeration structures and finishes									
0510	Wall finish, 2 coat portland cement plaster, 1/2" thick	1 Clob	200	.040	" S.F.		1.47		1.47	2.26
0520	Fiberglass panels, 1/8" thick		400	.020			.73		.73	1.13
0530	Ceiling finish, polystyrene plastic, 1" to 2" thick		500	.016			.59		.59	.90
0540	4" thick		450	.018			.65		.65	1.01
0550	Refrigerator, prefab aluminum walk-in, 7'-6" high, 6' x 6' OD	2 Corp	100	.160	SF Flr.		7.35		7.35	11.30
0560	10' x 10' OD		160	.100			4.59		4.59	7.10
0570	Over 150 S.F.		200	.080			3.67		3.67	5.65
0600	Sauna, prefabricated, including heater & controls, 7' high, to 30 S.F.		120	.133			6.10		6.10	9.45
0610	To 40 S.F.		140	.114			5.25		5.25	8.10
0620	To 60 S.F.		175	.091			4.19		4.19	6.45
0630	To 100 S.F.		220	.073			3.33		3.33	5.15
0640	To 130 S.F.		250	.064			2.93		2.93	4.53
0650	Steam bath, heater, timer, head, single, to 140 C.F.	1 Plum	2.20	3.636	Ea.		209		209	315
0660	To 300 C.F.		2.20	3.636			209		209	315
0670	Steam bath, comm. size, w/blow-down assembly, to 800 C.F.		1.80	4.444			256		256	385
0680	To 2500 C.F.		1.60	5			288		288	435
0690	Steam bath, comm. size, multiple, for motels, apts, 500 C.F., 2 baths		2	4			230		230	350
0700	1,000 C.F., 4 baths		1.40	5.714			330		330	495

13 05 05.75 Selective Demolition, Storage Tanks

0010	SELECTIVE DEMOLITION, STORAGE TANKS									
0500	Steel tank, single wall, above ground, not incl. fdn., pumps or piping									
0510	Single wall, 275 gallon	R024119-10	Q-1	3	5.333	Ea.	276		276	415
0520	550 thru 2,000 gallon		B-34P	2	12		575	350	925	1,250
0530	5,000 thru 10,000 gallon		B-34Q	2	12		580	640	1,220	1,575
0540	15,000 thru 30,000 gallon		B-34S	2	16		820	1,800	2,620	3,225
0600	Steel tank, double wall, above ground not incl. fdn., pumps & piping									
0620	500 thru 2,000 gallon		B-34P	2	12	Ea.	575	350	925	1,250

13 05 05.85 Selective Demolition, Swimming Pool Equip

0010	SELECTIVE DEMOLITION, SWIMMING POOL EQUIP									
0020	Diving stand, stainless steel, 3 meter	2 Clob	3	5.333	Ea.		195		195	300
0030	1 meter		5	3.200			117		117	181
0040	Diving board, 16' long, aluminum		5.40	2.963			109		109	168
0050	Fiberglass		5.40	2.963			109		109	168
0070	Ladders, heavy duty, stainless steel, 2 tread		14	1.143			42		42	64.50
0080	4 tread		12	1.333			49		49	75.50
0090	Lifeguard chair, stainless steel, fixed		5	3.200			117		117	181
0100	Slide, tubular, fiberglass, aluminum handrails & ladder, 5', straight		4	4			147		147	226
0110	8', curved		6	2.667			97.50		97.50	151
0120	10', curved		3	5.333			195		195	300
0130	12' straight, with platform		2.50	6.400			235		235	360
0140	Removable access ramp, stainless steel		4	4			147		147	226
0150	Removable stairs, stainless steel, collapsible		4	4			147		147	226

13 05 Common Work Results for Special Construction

13 05 05 – Selective Special Construction Demolition

13 05 05.90 Selective Demolition, Tension Structures		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bore Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SELECTIVE DEMOLITION, TENSION STRUCTURES									
0020	Steel/alum. frame, fabric shell, 60' clear span, 6,000 S.F.	B-41	2000	.022	SF Flr.		.83	.15	.98	1.45
0030	12,000 S.F.		2200	.020			.76	.13	.89	1.32
0040	80' clear span, 20,800 S.F.		2440	.018			.68	.12	.80	1.18
0050	100' clear span, 10,000 S.F.	L-5	4350	.013			.66	.17	.83	1.33
0060	26,000 S.F.		4600	.012			.62	.16	.78	1.26
0070	36,000 S.F.	▼	5000	.011	▼		.57	.15	.72	1.15

13 05 05.95 Selective Demo, X-Ray/Radio Freq Protection

0010	SELECTIVE DEMO, X-RAY/RADIO FREQ PROTECTION									
0020	Shielding lead, lined door frame, excl. hdwe., 1/16" thick	1 Clab	4.80	1.667	Ea.		61		61	94.50
0030	Lead sheets, 1/16" thick	R024119-10 2 Clab	270	.059	S.F.		2.17		2.17	3.35
0040	1/8" thick		240	.067			2.44		2.44	3.77
0050	Lead shielding, 1/4" thick		270	.059			2.17		2.17	3.35
0060	1/2" thick	▼	240	.067	▼		2.44		2.44	3.77
0070	Lead glass, 1/4" thick, 2.0 mm LE, 12" x 16"	2 Gloz	16	1	Ea.		44		44	67
0080	24" x 36"		8	2			88		88	134
0090	36" x 60"		4	4			176		176	268
0100	Lead glass window frame, with 1/16" lead & voice passage, 36" x 60"		4	4			176		176	268
0110	Lead glass window frame, 24" x 36"	▼	8	2			88		88	134
0120	Lead gypsum board, 5/8" thick with 1/16" lead	2 Clab	320	.050	S.F.		1.83		1.83	2.83
0130	1/8" lead		280	.057			2.09		2.09	3.23
0140	1/32" lead		400	.040	▼		1.47		1.47	2.26
0150	Butt joints, 1/8" lead or thicker, 2" x 7' long batten strip		480	.033	Ea.		1.22		1.22	1.88
0160	X-ray protection, average radiography room, up to 300 S.F., 1/16" lead, min		.50	32	Total		1,175		1,175	1,800
0170	Maximum		.30	53.333			1,950		1,950	3,025
0180	Deep therapy X-ray room, 250 kV cop, up to 300 S.F., 1/4" lead, min		.20	80			2,925		2,925	4,525
0190	Maximum		.12	133			4,875		4,875	7,550
0880	Radio frequency shielding, prefab or screen-type copper or steel, minimum		360	.044	SF Surf		1.63		1.63	2.51
0890	Average		310	.052			1.89		1.89	2.92
0895	Maximum	▼	290	.055	▼		2.02		2.02	3.12

13 11 Swimming Pools

13 11 13 – Below-Grade Swimming Pools

13 11 13.50 Swimming Pools

0010	SWIMMING POOLS Residential in-ground, vinyl lined, concrete									
0020	Sides including equipment, sand bottom	B-52	300	.187	SF Surf	21.50	7.95	1.98	31.43	38
0100	Metal or polystyrene sides	R131113-20 B-14	410	.117		17.75	4.53	.89	23.17	27.50
0200	Add for vermiculite bottom					1.35			1.35	1.49
0500	Gunite bottom and sides, white plaster finish									
0600	12' x 30' pool	B-52	145	.386	SF Surf	39.50	16.40	4.11	60.01	73
0720	16' x 32' pool		155	.361		35.50	15.35	3.84	54.69	66.50
0750	20' x 40' pool	▼	250	.224	▼	32	9.50	2.38	43.88	52
0810	Concrete bottom and sides, tile finish									
0820	12' x 30' pool	B-52	80	.700	SF Surf	40	30	7.45	77.45	97.50
0830	16' x 32' pool		95	.589		33	25	6.25	64.25	82
0840	20' x 40' pool		130	.431		26.50	18.30	4.58	49.38	62
1100	Metal, gunite with plaster finish, incl. medium									
1150	capacity filtration & chlorination	B-52	115	.487	SF Surf	48.50	20.50	5.20	74.20	90.50
1200	Municipal, gunite with plaster finish, incl. high									
1250	capacity filtration & chlorination	B-52	100	.560	SF Surf	63	24	5.95	92.95	113

13 11 Swimming Pools

13 11 13 – Below-Grade Swimming Pools

13 11 13.50 Swimming Pools		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1350	Add for formed gutters				L.F.	92.50			92.50	102
1360	Add for stainless steel gutters				"	274			274	300
1600	For water heating system, see Section 23 52 28.10									
1700	Filtration and deck equipment only, as % of total				Total				20%	20%
1800	Deck equipment, rule of thumb, 20' x 40' pool				SF Pool				1.18	1.30
1900	5000 S.F. pool				"				1.73	1.90
3000	Pointing pools, preparation + 3 coats, 20' x 40' pool, epoxy	2 Pord	.33	48.485	Total	1,775	1,925		3,700	4,825
3100	Rubber base point, 18 gallons	"	.33	48.485		1,325	1,925		3,250	4,325
3500	42' x 82' pool, 75 gallons, epoxy point	3 Pord	.14	171		7,500	6,775		14,275	18,500
3600	Rubber base point	"	.14	171		5,450	6,775		12,225	16,200

13 11 46 – Swimming Pool Accessories

13 11 46.50 Swimming Pool Equipment

0010	SWIMMING POOL EQUIPMENT									
0020	Diving stand, stainless steel, 3 meter	2 Corp	.40	40	Ea.	14,500	1,825		16,325	18,700
0300	1 meter		2.70	5.926		8,825	272		9,097	10,100
0600	Diving boards, 16' long, aluminum		2.70	5.926		3,975	272		4,247	4,775
0700	Fiberglass		2.70	5.926		3,200	272		3,472	3,950
0800	14' long, aluminum		2.70	5.926		3,900	272		4,172	4,725
0850	Fiberglass		2.70	5.926		3,100	272		3,372	3,825
1200	Ladders, heavy duty, stainless steel, 2 tread		7	2.286		775	105		880	1,025
1500	4 tread		6	2.667		1,050	122		1,172	1,350
1800	Lifeguard chair, stainless steel, fixed		2.70	5.926		3,150	272		3,422	3,875
1900	Portable					2,725			2,725	3,000
2100	Lights, underwater, 12 volt, with transformer, 300 watt	1 Elec	1	8		335	425		760	1,000
2200	110 volt, 500 watt, standard		1	8		293	425		718	960
2400	Low water cutoff type	▼	1	8	▼	300	425		725	970
2800	Heaters, see Section 23 52 28.10									
3000	Pool covers, reinforced vinyl	3 Clob	1800	.013	S.F.	.35	.49		.84	1.14
3050	Automatic, electric								8.75	9.65
3100	Vinyl water tube	3 Clob	3200	.008		.21	.27		.48	.65
3200	Maximum	"	3000	.008		.41	.29		.70	.90
3250	Sealed air bubble polyethylene solar blanket, 16 mils					.24			.24	.26
3300	Slides, tubular, fiberglass, aluminum handrails & ladder, 5'-0", straight	2 Corp	1.60	10	Ea.	3,400	460		3,860	4,450
3320	8'-0", curved		3	5.333		6,750	245		6,995	7,800
3400	10'-0", curved		1	16		21,800	735		22,535	25,100
3420	12'-0", straight with platform	▼	1.20	13.333	▼	13,400	610		14,010	15,600
4500	Hydraulic lift, movable pool bottom, single room									
4520	Under 1,000 S.F. area	L-9	72	.500	S.F.	130	21		151	177
4600	Four room lift, over 1,000 S.F.	"	109	.330	"	105	13.80		118.80	138
5000	Removable access ramp, stainless steel	2 Clob	2	8	Ea.	5,800	293		6,093	6,825

13 17 Tubs and Pools

13 17 33 – Whirlpool Tubs

13 17 33.10 Whirlpool Bath

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	WHIRLPOOL BATH									
6000	Whirlpool, bath with vented overflow, malded fiberglass									
6100	66" x 36" x 24"	Q-1	1	16	Ea.	3,325	830		4,155	4,900

13 18 Ice Rinks

13 18 13 – Ice Rink Floor Systems

13 18 13.50 Ice Skating

0010	ICE SKATING Equipment incl. refrigeration, plumbing & cooling									
0020	cails & concrete slab, 85' x 200' rink									
0300	55° system, 5 mas., 100 tan				Total	575,000			575,000	632,500
0700	90° system, 12 mas., 135 tan				"	650,000			650,000	715,000
1200	Subsail heating system (recycled fram compressor), 85' x 200'	Q-7	.27	118	Ea.	40,000	6,600		46,600	54,000
1300	Subsail insulation, 2 lb. polystyrene with vapor barrier, 85' x 200'	2 Carp	.14	114	"	30,000	5,250		35,250	41,100

13 18 16 – Ice Rink Dasher Boards

13 18 16.50 Ice Rink Dasher Boards

0010	ICE RINK DASHER BOARDS									
1000	Dasher boards, 1/2" H.D. polyethylene faced steel frame, 3' acrylic									
1020	screen at sides, 5' acrylic ends, 85' x 200'	F-5	.06	533	Ea.	135,000	24,700		159,700	186,500
1100	Fiberglass & aluminum construction, same sides and ends	"	.06	533	"	155,000	24,700		179,700	208,500

13 21 Controlled Environment Rooms

13 21 13 – Clean Rooms

13 21 13.50 Clean Room Components

0010	CLEAN ROOM COMPONENTS									
1100	Clean room, soft wall, 12' x 12', Class 100	1 Carp	.18	44.444	Ea.	17,200	2,050		19,250	22,200
1110	Class 1,000		.18	44.444		14,000	2,050		16,050	18,600
1120	Class 10,000		.21	38.095		12,400	1,750		14,150	16,300
1130	Class 100,000	▼	.21	38.095	▼	11,600	1,750		13,350	15,500
2800	Ceiling grid support, slatted channel struts 4'-0" O.C., ea. way				S.F.				5.90	6.50
3000	Ceiling panel, vinyl coated foil on mineral substrate									
3020	Sealed, non-perforated				S.F.				1.27	1.40
4000	Ceiling panel seal, silicone sealant, 150 L.F./gal.	1 Carp	150	.053	L.F.	.34	2.45		2.79	4.14
4100	Two sided adhesive tape	"	240	.033	"	.12	1.53		1.65	2.49
4200	Clips, one per panel				Ea.	.99			.99	1.09
6000	HEPA filter, 2' x 4', 99.97% eff., 3" dp beveled frame (silicone seal)					480			480	530
6040	6" deep skirted frame (channel seal)					420			420	460
6100	99.99% efficient, 3" deep beveled frame (silicone seal)					555			555	610
6140	6" deep skirted frame (channel seal)					435			435	475
6200	99.999% efficient, 3" deep beveled frame (silicone seal)					625			625	690
6240	6" deep skirted frame (channel seal)					450			450	495
7000	Wall panel systems, including channel strut framing									
7020	Polyester coated aluminum, particle board				S.F.				18.20	20
7100	Parcelain coated aluminum, particle board								32	35
7400	Wall panel support, slatted channel struts, to 12' high				▼				16.35	18

13 21 Controlled Environment Rooms

13 21 26 – Cold Storage Rooms

13 21 26.50 Refrigeration		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	REFRIGERATION									
0020	Curbs, 12" high, 4" thick, concrete	2 Carp	58	.276	L.F.	4.94	12.65		17.59	25
1000	Doors, see Section 08 34 13.10									
2400	Finishes, 2 coat portland cement plaster, 1/2" thick	1 Plas	48	.167	S.F.	1.36	7		8.36	12.05
2500	For galvanized reinforcing mesh, odd	1 Lath	335	.024		.90	.97		1.87	2.42
2700	3/16" thick latex cement	1 Plas	88	.091		2.31	3.81		6.12	8.30
2900	For glass cloth reinforced ceilings, add	"	450	.018		.55	.75		1.30	1.73
3100	Fiberglass panels, 1/8" thick	1 Carp	149.45	.054		3.06	2.45		5.51	7.15
3200	Polystyrene, plastic finish ceiling, 1" thick		274	.029		2.83	1.34		4.17	5.20
3400	2" thick		274	.029		3.23	1.34		4.57	5.60
3500	4" thick		219	.037		3.57	1.67		5.24	6.50
3800	Floors, concrete, 4" thick	1 Cefi	93	.086		1.29	3.79		5.08	7
3900	6" thick	"	85	.094		2.01	4.15		6.16	8.35
4000	Insulation, 1" to 6" thick, cork				B.F.	1.30			1.30	1.43
4100	Urethane					.51			.51	.56
4300	Polystyrene, regular					.52			.52	.57
4400	Bead board					.24			.24	.26
4600	Installation of above, odd per layer	2 Carp	657.60	.024	S.F.	.43	1.12		1.55	2.19
4700	Wall and ceiling juncture		298.90	.054	L.F.	2.11	2.45		4.56	6.10
4900	Partitions, galvanized sandwich panels, 4" thick, stack		219.20	.073	S.F.	8.85	3.35		12.20	14.90
5000	Aluminum or fiberglass	▼	219.20	.073	"	9.70	3.35		13.05	15.80
5200	Prefab walk-in, 7'-6" high, aluminum, incl. refrigeration, door & floor									
5210	not incl. partitions, 6' x 6'	2 Carp	54.80	.292	SF Flr.	158	13.40		171.40	195
5500	10' x 10'		82.20	.195		127	8.90		135.90	154
5700	12' x 14'		109.60	.146		114	6.70		120.70	136
5800	12' x 20'		109.60	.146		99.50	6.70		106.20	119
6100	For 8'-6" high, odd					5%				
6300	Rule of thumb for complete units, w/a doors & refrigeration, cooler	2 Carp	146	.110		143	5		148	166
6400	Freezer		109.60	.146	▼	170	6.70		176.70	196
6600	Shelving, plated or galvanized, steel wire type		360	.044	SF Hor.	12.55	2.04		14.59	16.95
6700	Slot shelf type	▼	375	.043	▼	15.50	1.96		17.46	20
6900	For stainless steel shelving, add				▼	300%				
7000	Vapor barrier, on wood walls	2 Carp	1644	.010	S.F.	.19	.45		.64	.90
7200	On masonry walls	"	1315	.012	"	.47	.56		1.03	1.38
7500	For air curtain doors, see Section 23 34 33.10									

13 21 48 – Sound-Conditioned Rooms

13 21 48.10 Anechoic Chambers

0010	ANECHOIC CHAMBERS Standard units, 7' ceiling heights									
0100	Area for pricing is net inside dimensions									
0300	200 cycles per second cutoff, 25 S.F. floor area				SF Flr.	1,625			1,625	1,800
0400	50 S.F.								1,050	1,150
0600	75 S.F.								1,000	1,100
0700	100 S.F.					1,225			1,225	1,350
0900	For 150 cycles per second cutoff, add to 100 S.F. room								30%	30%
1000	For 100 cycles per second cutoff, add to 100 S.F. room								45%	45%

13 21 48.15 Audiometric Rooms

0010	AUDIOMETRIC ROOMS									
0020	Under 500 S.F. surface	4 Carp	98	.327	SF Surf	52.50	14.95		67.45	80.50
0100	Over 500 S.F. surface	"	120	.267	"	50	12.25		62.25	74

13 21 Controlled Environment Rooms

13 21 53 – Darkrooms

13 21 53.50 Darkrooms		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	DARKROOMS									
0020	Shell, complete except for door, 64 S.F., 8' high	2 Corp	128	.125	SF Flr.	38.50	5.75		44.25	51
0100	12' high		64	.250		49	11.45		60.45	71.50
0500	120 S.F. floor, 8' high		120	.133		28	6.10		34.10	40
0600	12' high		60	.267		37.50	12.25		49.75	60.50
0800	240 S.F. floor, 8' high		120	.133		20.50	6.10		26.60	32
0900	12' high		60	.267	▼	27.50	12.25		39.75	49
1200	Mini-cylindrical, revolving, unlined, 4' diameter		3.50	4.571	Eq.	2,875	210		3,085	3,500
1400	5'-6" diameter		2.50	6.400		5,175	293		5,468	6,150
1600	Add for lead lining, inner cylinder, 1/32" thick					1,650			1,650	1,825
1700	1/16" thick					4,450			4,450	4,875
1800	Add for lead lining, inner and outer cylinder, 1/32" thick					3,050			3,050	3,375
1900	1/16" thick				▼	6,825			6,825	7,500
2000	For darkroom door, see Section 08 34 36.10									

13 21 56 – Music Rooms

13 21 56.50 Music Rooms

0010	MUSIC ROOMS									
0020	Practice room, modular, perforated steel, under 500 S.F.	2 Corp	70	.229	SF Surf	32	10.50		42.50	51.50
0100	Over 500 S.F.	"	80	.200	"	27	9.15		36.15	44

13 24 Special Activity Rooms

13 24 16 – Saunas

13 24 16.50 Saunas and Heaters

0010	SAUNAS AND HEATERS									
0020	Prefabricated, incl. heater & controls, 7' high, 6' x 4', C/C	L-7	2.20	12.727	Eq.	5,375	565		5,940	6,800
0050	6' x 4', C/P		2	14		4,875	620		5,495	6,325
0400	6' x 5', C/C		2	14		5,675	620		6,295	7,200
0450	6' x 5', C/P		2	14		5,150	620		5,770	6,600
0600	6' x 6', C/C		1.80	15.556		6,275	690		6,965	7,950
0650	6' x 6', C/P		1.80	15.556		5,725	690		6,415	7,350
0800	6' x 9', C/C		1.60	17.500		7,750	775		8,525	9,725
0850	6' x 9', C/P		1.60	17.500		7,000	775		7,775	8,900
1000	8' x 12', C/C		1.10	25.455		11,600	1,125		12,725	14,500
1050	8' x 12', C/P		1.10	25.455		10,500	1,125		11,625	13,200
1200	8' x 8', C/C		1.40	20		9,150	885		10,035	11,500
1250	8' x 8', C/P		1.40	20		8,450	885		9,335	10,600
1400	8' x 10', C/C		1.20	23.333		10,100	1,025		11,125	12,800
1450	8' x 10', C/P		1.20	23.333		9,225	1,025		10,250	11,800
1600	10' x 12', C/C		1	28		12,300	1,250		13,550	15,400
1650	10' x 12', C/P		1	28		10,900	1,250		12,150	13,900
1700	Door only, cedar, 2'x6', with 1'x4' tempered insulated glass window	2 Corp	3.40	4.706		735	216		951	1,150
1800	Prehung, incl. jombs, pulls & hardware	"	12	1.333		730	61		791	895
2500	Heaters only (incl. above), wall mounted, to 200 C.F.					675			675	745
2750	To 300 C.F.					910			910	1,000
3000	Floor standing, to 720 C.F., 10,000 watts, w/controls	1 Elec	3	2.667	▼	2,900	142		3,042	3,425
3250	To 1,000 C.F., 16,000 watts	"	3	2.667	▼	3,700	142		3,842	4,300

13 24 Special Activity Rooms

13 24 26 – Steam Baths

13 24 26.50 Steam Baths and Components		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	STEAM BATHS AND COMPONENTS									
0020	Heater, timer & head, single, to 140 C.F.	1 Plum	1.20	6.667	Eo.	1,450	385		1,835	2,175
0500	To 300 C.F.		1.10	7.273		1,550	420		1,970	2,325
1000	Commercial size, with blow-down assembly, to 800 C.F.		.90	8.889		7,350	510		7,860	8,850
1500	To 2500 C.F.	▼	.80	10		9,125	575		9,700	10,900
2000	Multiple, motels, opts., 2 boths, w/blow-down ossm., 500 C.F.	Q-1	1.30	12.308		7,950	640		8,590	9,725
2500	4 boths	"	.70	22.857		10,700	1,175		11,875	13,600
2700	Conversion unit for residential tub, including door				▼	3,600			3,600	3,950

13 28 Athletic and Recreational Special Construction

13 28 33 – Athletic and Recreational Court Walls

13 28 33.50 Sport Court

0010	SPORT COURT									
0020	Floors, No. 2 & better mople, 25/32" thick				SF Flr.				6.05	6.65
0100	Wolls, laminated plastic bonded to golv. steel studs				SF Woll				7.70	8.45
0150	Laminated fiberglass surfacing, minimum								1.91	2.10
0180	Maximum				▼				2.15	2.37
0300	Squash, regulation court in existing building, minimum				Court	36,800			36,800	40,400
0400	Maximum				"	41,000			41,000	45,000
0450	Rule of thumb for components:									
0470	Wolls	3 Corp	.15	160	Court	11,000	7,325		18,325	23,400
0500	Floor	"	.25	96		8,725	4,400		13,125	16,400
0550	Lighting	2 Elec	.60	26.667		2,100	1,425		3,525	4,425
0600	Hondboll, rocquetball court in existing building, minimum	C-1	.20	160		39,800	6,975		46,775	54,500
0800	Maximum	"	.10	320		43,100	13,900		57,000	69,000
0900	Rule of thumb for components: wolls	3 Corp	.12	200		12,600	9,175		21,775	28,100
1000	Floor	▼	.25	96		8,725	4,400		13,125	16,400
1100	Ceiling		.33	72.727		4,200	3,325		7,525	9,775
1200	Lighting	2 Elec	.60	26.667		2,200	1,425		3,625	4,550

13 31 Fabric Structures

13 31 13 – Air-Supported Fabric Structures

13 31 13.09 Air Supported Tank Covers

0010	AIR SUPPORTED TANK COVERS , vinyl polyester									
0100	Scrim, double loyer, with hardware, blower, standby & controls									
0200	Round, 75' diameter	B-2	4500	.009	S.F.	10.20	.33		10.53	11.75
0300	100' diameter		5000	.008		9.30	.30		9.60	10.65
0400	150' diameter		5000	.008		7.35	.30		7.65	8.55
0500	Rectangular, 20' x 20'		4500	.009		23	.33		23.33	26
0600	30' x 40'		4500	.009		23	.33		23.33	26
0700	50' x 60'	▼	4500	.009		23	.33		23.33	26
0800	For single woll construction, deduct, minimum					.79			.79	.87
0900	Maximum					2.33			2.33	2.56
1000	For maximum resistance to atmosphere or cold, odd					1.14			1.14	1.25
1100	For overage shipping charges, odd				Total	1,975			1,975	2,175

13 31 Fabric Structures

13 31 13 – Air-Supported Fabric Structures

13 31 13.13 Single-Walled Air-Supported Structures				Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SINGLE-WALLED AIR-SUPPORTED STRUCTURES			R133113-10								
0020	Site preparation, incl. anchor placement and utilities			B-11B	1000	.016	SF Flr.	1.16	.67	.30	2.13	2.63
0030	For concrete, see Section 03 30 53.40											
0050	Warehouse, polyester/vinyl fabric, 28 oz., over 10 yr. life, welded											
0060	Seams, tension cables, primary & auxiliary inflation system,											
0070	airlock, personnel doors and liner											
0100	5,000 S.F.			4 Clob	5000	.006	SF Flr.	25	.23		25.23	28
0250	12,000 S.F.			"	6000	.005		18	.20		18.20	20
0400	24,000 S.F.			8 Clob	12000	.005		12.65	.20		12.85	14.25
0500	50,000 S.F.			"	12500	.005		11.75	.19		11.94	13.20
0700	12 oz. reinforced vinyl fabric, 5 yr. life, sewn seams,											
0710	accordion door, including liner											
0750	3000 S.F.			4 Clob	3000	.011	SF Flr.	12	.39		12.39	13.80
0800	12,000 S.F.			"	6000	.005		10.20	.20		10.40	11.55
0850	24,000 S.F.			8 Clob	12000	.005		8.65	.20		8.85	9.80
0950	Deduct for single layer							1.03			1.03	1.13
1000	Add for welded seams							1.01			1.01	1.11
1050	Add for double layer, welded seams included							2.08			2.08	2.29
1250	Tedlar/vinyl fabric, 28 oz., with liner, over 10 yr. life,											
1260	incl. overhead and personnel doors											
1300	3000 S.F.			4 Clob	3000	.011	SF Flr.	24.50	.39		24.89	27.50
1450	12,000 S.F.			"	6000	.005		17.20	.20		17.40	19.25
1550	24,000 S.F.			8 Clob	12000	.005		13.30	.20		13.50	14.95
1700	Deduct for single layer							1.44			1.44	1.58
2250	Greenhouse/shelter, woven polyethylene with liner, 2 yr. life,											
2260	sewn seams, including doors											
2300	3000 S.F.			4 Clob	3000	.011	SF Flr.	6.60	.39		6.99	7.85
2350	12,000 S.F.			"	6000	.005		6.70	.20		6.90	7.70
2450	24,000 S.F.			8 Clob	12000	.005		5.60	.20		5.80	6.45
2550	Deduct for single layer							.63			.63	.69
2600	Tennis/gymnasium, polyester/vinyl fabric, 28 oz., over 10 yr. life,											
2610	including thermal liner, heat and lights											
2650	7,200 S.F.			4 Clob	6000	.005	SF Flr.	23.50	.20		23.70	26.50
2750	13,000 S.F.			"	6500	.005		18	.18		18.18	20
2850	Over 24,000 S.F.			8 Clob	12000	.005		16.45	.20		16.65	18.35
2860	For low temperature conditions, add							1.14			1.14	1.25
2870	For overage shipping charges, add						Total	5,600			5,600	6,150
2900	Thermal liner, translucent reinforced vinyl						SF Flr.	1.14			1.14	1.25
2950	Metalized mylar fabric and mesh, double liner						"	2.33			2.33	2.56
3050	Stadium/convention center, teflon coated fiberglass, heavy weight,											
3060	over 20 yr. life, incl. thermal liner and heating system											
3100	Minimum			9 Clob	26000	.003	SF Flr.	57.50	.10		57.60	63
3110	Maximum			"	19000	.004	"	68	.14		68.14	75
3400	Doors, air lock, 15' long, 10' x 10'			2 Corp	.80	20	Eq.	20,400	915		21,315	23,900
3600	15' x 15'			"	.50	32		30,300	1,475		31,775	35,700
3700	For each added 5' length, add							5,425			5,425	5,950
3900	Revolving personnel door, 6' diameter, 6'-6" high			2 Corp	.80	20		15,200	915		16,115	18,100
4200	Double wall, self supporting, shell only, minimum						SF Flr.				19.10	21
4300	Maximum						"				35.50	39

13 31 Fabric Structures

13 31 23 – Tensioned Fabric Structures

13 31 23.50 Tension Structures		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	TENSION STRUCTURES Rigid steel/alum. frame, vinyl coated poly									
0100	Fabric shell, 80' clear span, not incl. foundations or floors									
0200	6,000 S.F.	B-41	1000	.044	SF Flr.	13.80	1.67	.29	15.76	18.10
0300	12,000 S.F.		1100	.040		13.20	1.52	.27	14.99	17.20
0400	80' to 99' clear span, 20,800 S.F.		1220	.036		13	1.37	.24	14.61	16.70
0410	100' to 119' clear span, 10,000 S.F.	L-5	2175	.026		13.70	1.32	.34	15.36	17.70
0430	26,000 S.F.		2300	.024		12.75	1.25	.32	14.32	16.55
0450	36,000 S.F.		2500	.022		12.60	1.15	.30	14.05	16.15
0460	120' to 149' clear span, 24,000 S.F.		3000	.019		13.90	.96	.25	15.11	17.20
0470	150' to 199' clear span, 30,000 S.F.		6000	.009		14.45	.48	.12	15.05	16.80
0480	200' clear span, 40,000 S.F.	E-6	8000	.016		17.75	.81	.23	18.79	21
0500	For roll-up door, 12' x 14', add	L-2	1	16	Ea.	5,500	645		6,145	7,050
0600	For personnel doors, add, minimum				SF Flr.	5%				
0700	Add, maximum					15%				
0800	For site work, simple foundation, etc., add, minimum								1.25	1.95
0900	Add, maximum								2.75	3.05

13 34 Fabricated Engineered Structures

13 34 13 – Glazed Structures

13 34 13.13 Greenhouses

0010	GREENHOUSES , Shell only, stock units, not incl. 2' stub walls,										
0020	foundation, floors, heat or compartments										
0300	Residential type, free standing, 8'-6" long x 7'-6" wide	2 Corp	59	.271	SF Flr.	31.50	12.45		43.95	54	
0400	10'-6" wide		85	.188		24	8.65		32.65	40	
0600	13'-6" wide		108	.148		23.50	6.80		30.30	36.50	
0700	17'-0" wide		160	.100		19.20	4.59		23.79	28	
0900	Lean-to type, 3'-10" wide		34	.471		36.50	21.50		58	74	
1000	6'-10" wide		58	.276		44.50	12.65		57.15	68.50	
1500	Commercial, custom, truss frame, incl. equip., plumbing, elec.,										
1510	benches and controls, under 2,000 S.F., minimum				SF Flr.				27.50	30	
1550	Maximum					17.40			17.40	19.10	
1700	Over 5,000 S.F., minimum					15.70			15.70	17.25	
1750	Maximum								27.50	30	
2000	Institutional, custom, rigid frame, including compartments and										
2010	multi-controls, under 500 S.F., minimum				SF Flr.	45			45	49.50	
2050	Maximum					35.50			35.50	39	
2150	Over 2,000 S.F., minimum					11.70			11.70	12.90	
2200	Maximum					59			59	65	
2400	Concealed rigid frame, under 500 S.F., minimum								82	90	
2450	Maximum								100	110	
2550	Over 2,000 S.F., minimum								62	68	
2600	Maximum								72	79	
2800	Lean-to type, under 500 S.F., minimum								72.50	80	
2850	Maximum								109	120	
3000	Over 2,000 S.F., minimum								40	44	
3050	Maximum								66.50	73	
3700	For 1/4" tempered glass, add				SF Surf	1.34			1.34	1.47	
3900	Cooling, 1200 CFM exhaust fan, add				Ea.	289			289	320	
4000	7850 CFM					995			995	1,100	
4200	For heaters, 10 MBH, add					209			209	230	

13 34 Fabricated Engineered Structures

13 34 13 – Glazed Structures

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
13 34 13.13 Greenhouses							Labor	Equipment		
4300	60 MBH, add				Ea.	760			760	835
4500	Far benches, 2' x 8', add					157			157	173
4600	4' x 10', add					190			190	209
4800	Far controls, add, minimum				Total	240			240	264
4900	Maximum				"	750			750	825
5100	Far humidification equipment, add				Ea.	400			400	440
5200	Far vinyl shading, add				S.F.	.24			.24	.26
6000	Geodesic hemisphere, 1/8" plexiglass glazing									
6050	8' diameter	2 Carp	2	8	Ea.	6,250	365		6,615	7,450
6150	24' diameter		.35	45.714		14,000	2,100		16,100	18,500
6250	48' diameter		.20	80		33,000	3,675		36,675	41,900

13 34 13.19 Swimming Pool Enclosures

0010	SWIMMING POOL ENCLOSURES Translucent, free standing									
0020	not including foundations, heat or light									
0200	Economy, minimum	2 Carp	200	.080	SF Har.	60	3.67		63.67	71.50
0300	Maximum		100	.160		65	7.35		72.35	83
0400	Deluxe, minimum		100	.160		72	7.35		79.35	90.50
0600	Maximum	▼	70	.229		93	10.50		103.50	118
0700	Far motorized roof, 40% opening, solid roof, add					21			21	23
0800	Skylight type roof, add					13.50			13.50	14.85
0900	Air-inflated, including blowers and heaters, minimum								3.18	3.50
1000	Maximum								6.10	6.70

13 34 16 – Grandstands and Bleachers

13 34 16.13 Grandstands

0010	GRANDSTANDS Permanent, municipal, including foundation									
0050	Steel understructure w/aluminum closed deck, minimum				Seat				118	130
0100	Maximum								205	225
0300	Steel, minimum					18.10			18.10	19.90
0400	Maximum					20.50			20.50	22.50
0600	Aluminum, extruded, stack design, minimum								63.50	70
0700	Maximum								105	115
0900	Composite, steel, wood and plastic, stack design, minimum					35			35	38.50
1000	Maximum					62			62	68.50

13 34 16.53 Bleachers

0010	BLEACHERS									
0020	Bleachers, outdoor, portable, 5 tiers, 42 seats	2 Sswk	120	.133	Seat	90	6.80		96.80	111
0100	5 tiers, 54 seats		80	.200		80.50	10.20		90.70	107
0200	10 tiers, 104 seats		120	.133		91	6.80		97.80	112
0300	10 tiers, 144 seats	▼	80	.200	▼	82	10.20		92.20	108
0500	Permanent bleachers, aluminum seat, steel frame, 24" raw									
0600	8 tiers, 80 seats	2 Sswk	60	.267	Seat	66	13.65		79.65	96.50
0700	8 tiers, 160 seats		48	.333		57	17.05		74.05	93
0925	15 tiers, 154 to 165 seats		60	.267		99	13.65		112.65	133
0975	15 tiers, 214 to 225 seats		60	.267		90	13.65		103.65	123
1050	15 tiers, 274 to 285 seats		60	.267		81	13.65		94.65	114
1200	Seat backs only, 30" raw, fiberglass		160	.100		40	5.10		45.10	53
1300	Steel and wood	▼	160	.100	▼	18.15	5.10		23.25	29
1400	NOTE: average seating is 1.5' in width									

13 34 Fabricated Engineered Structures

13 34 19 – Metal Building Systems

13 34 19.50 Pre-Engineered Steel Buildings

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	PRE-ENGINEERED STEEL BUILDINGS									
					R133419-10					
0100	Clear span rigid frame, 26 ga. colored roofing and siding									
0150	20' to 29' wide, 10' eave height	E-2	425	.132	SF Flr.	8.50	6.60	3.60	18.70	24.50
0160	14' eave height		350	.160		9.20	8.05	4.37	21.62	28.50
0170	16' eave height		320	.175		9.85	8.80	4.78	23.43	31
0180	20' eave height		275	.204		10.75	10.20	5.55	26.50	35.50
0190	24' eave height		240	.233		11.85	11.70	6.35	29.90	40
0200	30' to 49' wide, 10' eave height		535	.105		6.45	5.25	2.86	14.56	19.15
0300	14' eave height		450	.124		7	6.25	3.40	16.65	22
0400	16' eave height		415	.135		7.45	6.75	3.68	17.88	24
0500	20' eave height		360	.156		8.10	7.80	4.25	20.15	27
0600	24' eave height		320	.175		8.90	8.80	4.78	22.48	30
0700	50' to 100' wide, 10' eave height		770	.073		5.50	3.65	1.99	11.14	14.45
0900	16' eave height		600	.093		6.30	4.68	2.55	13.53	17.70
1000	20' eave height		490	.114		6.85	5.75	3.12	15.72	20.50
1100	24' eave height	▼	435	.129	▼	7.55	6.45	3.51	17.51	23
1200	Clear span tapered beam frame, 26 ga. colored roofing/siding									
1300	30' to 39' wide, 10' eave height	E-2	535	.105	SF Flr.	7.35	5.25	2.86	15.46	20
1400	14' eave height		450	.124		8.10	6.25	3.40	17.75	23
1500	16' eave height		415	.135		8.50	6.75	3.68	18.93	25
1600	20' eave height		360	.156		9.35	7.80	4.25	21.40	28
1700	40' wide, 10' eave height		600	.093		6.50	4.68	2.55	13.73	17.90
1800	14' eave height		510	.110		7.20	5.50	3	15.70	20.50
1900	16' eave height		475	.118		7.55	5.90	3.22	16.67	22
2000	20' eave height		415	.135		8.30	6.75	3.68	18.73	24.50
2100	50' to 79' wide, 10' eave height		770	.073		6.05	3.65	1.99	11.69	15.05
2200	14' eave height		675	.083		6.60	4.16	2.26	13.02	16.80
2300	16' eave height		635	.088		6.85	4.43	2.41	13.69	17.70
2400	20' eave height		490	.114		7.45	5.75	3.12	16.32	21.50
2410	80' to 100' wide, 10' eave height		935	.060		5.40	3.01	1.64	10.05	12.80
2420	14' eave height		750	.075		5.90	3.75	2.04	11.69	15.10
2430	16' eave height		685	.082		6.20	4.10	2.23	12.53	16.20
2440	20' eave height		560	.100		6.60	5	2.73	14.33	18.80
2460	101' to 120' wide, 10' eave height		950	.059		4.94	2.96	1.61	9.51	12.20
2470	14' eave height		770	.073		5.50	3.65	1.99	11.14	14.45
2480	16' eave height		675	.083		5.85	4.16	2.26	12.27	15.95
2490	20' eave height	▼	560	.100	▼	6.25	5	2.73	13.98	18.35
2500	Single post 2-span frame, 26 ga. colored roofing and siding									
2600	80' wide, 14' eave height	E-2	740	.076	SF Flr.	5.50	3.80	2.07	11.37	14.75
2700	16' eave height		695	.081		5.85	4.04	2.20	12.09	15.65
2800	20' eave height		625	.090		6.30	4.50	2.45	13.25	17.30
2900	24' eave height		570	.098		6.90	4.93	2.68	14.51	18.90
3000	100' wide, 14' eave height		835	.067		5.35	3.37	1.83	10.55	13.55
3100	16' eave height		795	.070		4.95	3.54	1.92	10.41	13.55
3200	20' eave height		730	.077		6	3.85	2.09	11.94	15.45
3300	24' eave height		670	.084		6.65	4.19	2.28	13.12	16.95
3400	120' wide, 14' eave height		870	.064		6.25	3.23	1.76	11.24	14.30
3500	16' eave height		830	.067		5.55	3.39	1.84	10.78	13.90
3600	20' eave height		765	.073		6	3.67	2	11.67	15.05
3700	24' eave height		705	.079		6.60	3.99	2.17	12.76	16.40
3800	Double post 3-span frame, 26 ga. colored roofing and siding									
3900	150' wide, 14' eave height	E-2	925	.061	SF Flr.	4.35	3.04	1.65	9.04	11.75

13 34 Fabricated Engineered Structures

13 34 19 – Metal Building Systems

13 34 19.50 Pre-Engineered Steel Buildings		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4000	16' eave height	E-2	890	.063	SF Flr.	4.53	3.16	1.72	9.41	12.20
4100	20' eave height		820	.068		4.93	3.43	1.86	10.22	13.25
4200	24' eave height	▼	765	.073	▼	5.45	3.67	2	11.12	14.45
4300	Triple past 4-span frame, 26 ga. colored roofing and siding									
4400	160' wide, 14' eave height	E-2	970	.058	SF Flr.	4.28	2.90	1.58	8.76	11.35
4500	16' eave height		930	.060		4.46	3.02	1.64	9.12	11.85
4600	20' eave height		870	.064		4.37	3.23	1.76	9.36	12.25
4700	24' eave height		815	.069		4.97	3.45	1.88	10.30	13.35
4800	200' wide, 14' eave height		1030	.054		3.90	2.73	1.48	8.11	10.55
4900	16' eave height		995	.056		4.05	2.82	1.54	8.41	10.95
5000	20' eave height		935	.060		4.47	3.01	1.64	9.12	11.80
5100	24' eave height	▼	885	.063	▼	5	3.18	1.73	9.91	12.80
5200	Accessory items: add to the basic building cost above									
5250	Eave overhang, 2' wide, 26 ga., with soffit	E-2	360	.156	L.F.	29.50	7.80	4.25	41.55	50.50
5300	4' wide, without soffit		300	.187		26	9.35	5.10	40.45	50
5350	With soffit		250	.224		38	11.25	6.10	55.35	67.50
5400	6' wide, without soffit		250	.224		34	11.25	6.10	51.35	63.50
5450	With soffit		200	.280	▼	45.50	14.05	7.65	67.20	82.50
5500	Entrance canopy, incl. frame, 4' x 4'		25	2.240	Eq.	475	112	61	648	780
5550	4' x 8'		19	2.947	"	550	148	80.50	778.50	945
5600	End wall roof overhang, 4' wide, without soffit		850	.066	L.F.	16.55	3.31	1.80	21.66	26
5650	With soffit	▼	500	.112	"	27	5.60	3.06	35.66	42.50
5700	Doors, HM self-framing, incl. butts, lockset and trim									
5750	Single leaf, 3070 (3' x 7'), economy	2 Sswk	5	3.200	Opng.	585	164		749	935
5800	Deluxe		4	4		640	204		844	1,075
5825	Glozed		4	4		745	204		949	1,175
5850	3670 (3'-6" x 7')		4	4		815	204		1,019	1,250
5900	4070 (4' x 7')		3	5.333		885	273		1,158	1,450
5950	Double leaf, 6070 (6' x 7')		2	8		1,100	410		1,510	1,925
6000	Glazed		2	8		1,400	410		1,810	2,275
6050	Forming only, for openings, 3' x 7'		4	4		185	204		389	565
6100	10' x 10'		3	5.333		610	273		883	1,150
6150	For windows below, 2020 (2' x 2')		6	2.667		196	136		332	455
6200	4030 (4' x 3')		5	3.200	▼	239	164		403	550
6250	Flashings, 26 ga., corner or eave, painted		240	.067	L.F.	4.30	3.41		7.71	10.75
6300	Galvanized		240	.067		4.10	3.41		7.51	10.50
6350	Rake flashing, pointed		240	.067		4.64	3.41		8.05	11.10
6400	Galvanized		240	.067		4.40	3.41		7.81	10.85
6450	Ridge flashing, 18" wide, pointed		240	.067		6.20	3.41		9.61	12.80
6500	Galvanized		240	.067		7.10	3.41		10.51	13.80
6550	Gutter, eave type, 26 ga., painted		320	.050		6.70	2.56		9.26	11.90
6650	Volley type, between buildings, pointed	▼	120	.133	▼	12.85	6.80		19.65	26
6710	Insulation, rated .6 lb. density, unfaced 4" thick, R13	2 Carp	2300	.007	S.F.	.39	.32		.71	.92
6720	6" thick, R19		2300	.007		.52	.32		.84	1.06
6730	10" thick, R30		2300	.007		1	.32		1.32	1.59
6750	Insulation, rated .6 lb. density, paly/scrim/fail (PSF) faced									
6760	4" thick R13	2 Carp	2300	.007	S.F.	.58	.32		.90	1.13
6770	6" thick, R19		2300	.007		.82	.32		1.14	1.39
6780	9 1/2" thick, R30		2300	.007		.90	.32		1.22	1.48
6800	Insulation, rated .6 lb. density, vinyl faced 1-1/2" thick, R5		2300	.007		.28	.32		.60	.80
6850	3" thick, R10		2300	.007		.30	.32		.62	.82
6900	4" thick, R13		2300	.007		.40	.32		.72	.93
6920	6" thick, R19		2300	.007		.53	.32		.85	1.07

13 34 Fabricated Engineered Structures

13 34 19 – Metal Building Systems

13 34 19.50 Pre-Engineered Steel Buildings

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6930	10" thick, R30	2 Corp	2300	.007	S.F.	1.32	.32		1.64	1.94
6950	Foil/scrim/kroft (FSK) faced, 1-1/2" thick, R5		2300	.007		.30	.32		.62	.82
7000	2" thick, R6		2300	.007		.39	.32		.71	.92
7050	3" thick, R10		2300	.007		.41	.32		.73	.94
7100	4" thick, R13		2300	.007		.43	.32		.75	.96
7110	6" thick, R19		2300	.007		.60	.32		.92	1.15
7120	10" thick, R30		2300	.007		.84	.32		1.16	1.41
7150	Metolized polyester/scrim/kroft (PSK) facing, 1-1/2" thk, R5		2300	.007		.49	.32		.81	1.03
7200	2" thick, R6		2300	.007		.58	.32		.90	1.13
7250	3" thick, R11		2300	.007		.66	.32		.98	1.22
7300	4" thick, R13		2300	.007		.75	.32		1.07	1.32
7310	6" thick, R19		2300	.007		.97	.32		1.29	1.56
7320	10" thick, R30		2300	.007		1.08	.32		1.40	1.68
7350	Vinyl/scrim/foil (VSF), 1-1/2" thick, R5		2300	.007		.43	.32		.75	.96
7400	2" thick, R6		2300	.007		.55	.32		.87	1.10
7450	3" thick, R10		2300	.007		.59	.32		.91	1.14
7500	4" thick, R13		2300	.007		.73	.32		1.05	1.29
7510	Vinyl/scrim/vinyl (VSV) 4" thick, R13		2300	.007		.48	.32		.80	1.02
7520	6" thick, R19		2300	.007		.62	.32		.94	1.17
7530	9 1/2" thick, R30		2300	.007		.84	.32		1.16	1.41
7540	Polyprop/scrim/polyester (PSP), 4", R13		2300	.007		.53	.32		.85	1.07
7550	6" thick, R19		2300	.007		.66	.32		.98	1.22
7555	10" thick, R30		2300	.007		1.17	.32		1.49	1.78
7560	Polyprop/scrim/kroft/polyester (PSKP), 4" thick, R13		2300	.007		.49	.32		.81	1.03
7570	6" thick, R19		2300	.007		.68	.32		1	1.24
7580	10" thick, R19		2300	.007		1.29	.32		1.61	1.91
7585	Vinyl/scrim/polyester (VSP), 4" thick, R13		2300	.007		.52	.32		.84	1.06
7590	6" thick, R19		2300	.007		.64	.32		.96	1.19
7600	10" thick, R30	▼	2300	.007	▼	1	.32		1.32	1.59
7635	Insulation instollotion, over the purlin, second layer, up to 4" thick, odd						90%			
7640	Insulation instollotion, between the purlins, up to 4" thick, odd						100%			
7650	Sosh, single slide, glozed, with screens, 2020 (2' x 2')	E-1	22	1.091	Opng.	125	55	6.45	186.45	238
7700	3030 (3' x 3')		14	1.714		282	86.50	10.15	378.65	465
7750	4030 (4' x 3')		13	1.846		375	93	10.95	478.95	585
7800	6040 (6' x 4')		12	2		750	101	11.85	862.85	1,000
7850	Double slide sosh, 3030 (3' x 3')		14	1.714		220	86.50	10.15	316.65	400
7900	6040 (6' x 4')		12	2		585	101	11.85	697.85	830
7950	Fixed glass, no screens, 3030 (3' x 3')		14	1.714		215	86.50	10.15	311.65	395
8000	6040 (6' x 4')		12	2		575	101	11.85	687.85	815
8050	Prefinished storm sosh, 3030 (3' x 3')		70	.343		75	17.30	2.03	94.33	114
8100	Siding ond roofing, see Sections 07 41 13.00 & 07 42 13.00									
8200	Skylight, fibergloss ponels, to 30 S.F.	E-1	10	2.400	Ea.	107	121	14.20	242.20	335
8250	Larger sizes, odd for excess over 30 S.F.	"	300	.080	S.F.	3.55	4.03	.47	8.05	11.25
8300	Roof vents, turbine ventilator, wind driven									
8350	No damper, includes bose, golvonized									
8400	12" diameter	Q-9	10	1.600	Ea.	91	79		170	220
8450	20" diameter		8	2		257	98.50		355.50	430
8500	24" diameter		8	2		405	98.50		503.50	595
8600	Continuous, 26 go., 10' long, 9" wide	2 Sswk	4	4		36	204		240	400
8650	12" wide	"	4	4		36	204		240	400

13 34 Fabricated Engineered Structures

13 34 23 – Fabricated Structures

13 34 23.10 Comfort Stations				Daily Labor- Crew Output Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	COMFORT STATIONS Prefab., stock, w/doors, windows & fixt.									
0100	Not incl. interior finish or electrical									
0300	Mobile, on steel frame, 2 unit				S.F.	196			196	215
0350	7 unit					249			249	274
0400	Permanent, including concrete slab, 2 unit			B-12J		249	13.90	17.65	280.55	315
0500	6 unit			"		191	16.15	20.50	227.65	258
0600	Alternate pricing method, mobile, 2 fixture				Fixture	5,575			5,575	6,150
0650	7 fixture					8,975			8,975	9,875
0700	Permanent, 2 unit			B-12J		20,500	995	1,250	22,745	25,500
0750	6 unit			"		17,400	1,400	1,775	20,575	23,300

13 34 23.15 Domes

0010	DOMES									
0020	Domes, rev. alum., elec. drive, for astronomy obsv. shell only, stock units									
0600	10'-6" diameter			2 Corp		30,000	2,925		32,925	37,500
0900	18'-6" diameter					70,000	4,325		74,325	83,500
1200	24'-6" diameter			▼		95,500	9,175		104,675	119,000
1500	Domes, bulk storage, shell only, dual radius hemisphere, orch, steel									
1600	forming, corrugated steel covering, 150' diameter			E-2		28	5.10	2.78	35.88	42.50
1700	400' diameter			"		22.50	3.90	2.12	28.52	34
1800	Wood forming, wood decking, to 400' diameter			F-4		37.50	5.55	2.84	45.89	53
1900	Radiol formed wood (2" x 6"), 1/2" thick									
2000	plywood, asphalt shingles, 50' diameter			F-3		72.50	.93	.33	73.76	81.50
2100	60' diameter					62	.98	.35	63.33	70
2200	72' diameter					51.50	1.04	.37	52.91	58.50
2300	116' diameter					35	1.08	.38	36.46	40.50
2400	150' diameter			▼		37.50	1.25	.44	39.19	44

13 34 23.16 Fabricated Control Booths

0010	FABRICATED CONTROL BOOTHS									
0100	Guard House, prefab conc. w/bullet resistant doors & windows, roof & wiring									
0110	8' x 8', Level III			L-10		38,400	1,225	665	40,290	45,100
0120	8' x 8', Level IV			"		43,800	1,225	665	45,690	51,000

13 34 23.25 Garage Costs

0010	GARAGE COSTS									
0020	Public parking, overage				Cor				18,100	19,900
0100	See also Square Foot Costs in Reference Section									
0300	Residential, wood, 12' x 20', one cor prefab shell, stock, economy			2 Corp		5,225	735		5,960	6,875
0350	Custom					6,250	1,100		7,350	8,550
0400	Two cor, 24' x 20', economy					9,875	1,100		10,975	12,600
0450	Custom			▼		11,700	1,475		13,175	15,100

13 34 23.30 Garden House

0010	GARDEN HOUSE Prefab wood, no floors or foundations									
0100	6' x 6'			2 Corp		47	3.67		50.67	57.50
0300	8' x 12'			"		28	15.30		43.30	54.50

13 34 23.35 Geodesic Domes

0010	GEODESIC DOMES Shell only, interlocking plywood panels									
0400	30' diameter			F-5		23,000	925		23,925	26,700
0500	33' diameter					24,300	1,300		25,600	28,700
0600	40' diameter					28,200	1,475		29,675	33,300
0700	45' diameter			F-3		29,500	1,650	590	31,740	35,700
0750	56' diameter					53,000	1,875	665	55,540	62,000
0800	60' diameter			▼		60,000	1,875	665	62,540	69,500

13 34 Fabricated Engineered Structures

13 34 23 – Fabricated Structures

13 34 23.35 Geodesic Domes

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
0850	67' diameter	F-3	.80	50	Ea.	84,500	2,325	830	87,655	97,500
1100	Aluminum panel, with 6" insulation									
1200	100' diameter				~SF Flr.	30.50			30.50	33.50
1300	500' diameter				"	29.50			29.50	32.50
1600	Aluminum framed, plexiglass closure panels									
1700	40' diameter				SF Flr.	75.50			75.50	83
1800	200' diameter				"	69.50			69.50	76.50
2100	Aluminum framed, aluminum closure panels									
2200	40' diameter				SF Flr.	24.50			24.50	27
2300	100' diameter					23.50			23.50	26
2400	200' diameter					23.50			23.50	26
2500	Far VRP faced banded fiberglass insulation, add									10
2700	Aluminum framed, fiberglass sandwich panel closure									
2800	6' diameter	2 Carp	150	.107	SF Flr.	33	4.89		37.89	44
2900	28' diameter	"	350	.046	"	30	2.10		32.10	36

13 34 23.45 Kiosks

0010	KIOSKS									
0020	Round, advertising type, 5' diameter, 7' high, aluminum wall, illuminated				Ea.	23,500			23,500	25,800
0100	Aluminum wall, non-illuminated					22,500			22,500	24,700
0500	Rectangular, 5' x 9', 7'-6" high, aluminum wall, illuminated					25,500			25,500	28,000
0600	Aluminum wall, non-illuminated				▼	24,000			24,000	26,400

13 34 23.60 Portable Booths

0010	PORTABLE BOOTHS Prefab. aluminum with doors, windows, ext. roof									
0100	lights wiring & insulation, 15 S.F. building, O.D., painted, minimum				S.F.	258			258	284
0300	30 S.F. building					208			208	229
0400	50 S.F. building					164			164	180
0600	80 S.F. building					142			142	156
0700	100 S.F. building				▼	123			123	135
0900	Acaustical booth, 27 Db @ 1,000 Hz, 15 S.F. floor				Ea.	3,550			3,550	3,925
1000	7' x 7'-6", including light & ventilation					7,325			7,325	8,050
1200	Ticket booth, galv. steel, nat incl. foundations., 4' x 4'					4,375			4,375	4,800
1300	4' x 6'					6,625			6,625	7,300

13 34 23.70 Shelters

0010	SHELTERS									
0020	Aluminum frame, acrylic glazing, 3' x 9' x 8' high	2 Sswk	1.14	14.035	Ea.	2,400	715		3,115	3,900
0100	9' x 12' x 8' high	"	.73	21.918	"	5,700	1,125		6,825	8,225

13 34 43 – Aircraft Hangars

13 34 43.50 Hangars

0010	HANGARS Prefabricated steel T hangars, Galv. steel roof &									
0100	walls, incl. electric bi-folding doors									
0110	not including floors or foundations, 4 unit	E-2	1275	.044	SF Flr.	12.45	2.20	1.20	15.85	18.75
0130	8 unit		1063	.053		11.35	2.64	1.44	15.43	18.50
0900	With battam rolling doors, 4 unit		1386	.040		11.50	2.03	1.10	14.63	17.30
1000	8 unit	▼	966	.058	▼	10.30	2.91	1.58	14.79	18.05
1200	Alternate pricing method:									
1300	Galv. roof and walls, electric bi-folding doors, 4 plane	E-2	1.06	52.830	Plane	16,500	2,650	1,450	20,600	24,300
1500	8 plane		.91	61.538		13,500	3,100	1,675	18,275	22,000
1600	With battam rolling doors, 4 plane		1.25	44.800		15,300	2,250	1,225	18,775	22,000
1800	8 plane		.97	57.732		12,300	2,900	1,575	16,775	20,300
2000	Circular type, prefab., steel frame, plastic skin, electric									
2010	door, including foundations, 80' diameter,									

13 34 Fabricated Engineered Structures

13 34 53 – Agricultural Structures

13 34 53.50 Silos		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SILOS									
0500	Steel, factory fab., 30,000 gallon cap., pointed, minimum	L-5	1	56	Ea.	22,100	2,875	745	25,720	30,100
0700	Maximum		.50	112		35,100	5,750	1,500	42,350	50,000
0800	Epoxy lined, minimum		1	56		36,100	2,875	745	39,720	45,500
1000	Maximum	▼	.50	112	▼	45,700	5,750	1,500	52,950	62,000

13 34 63 – Natural Fiber Construction

13 34 63.50 Straw Bale Construction

0010	STRAW BALE CONSTRUCTION									
2000	Straw boles wall, incl. labor & material complete, minimum	G			SF Flr.					130
2010	Maximum	G			"					160
2020	Straw bales in walls w/modified post and beam frame	G	2 Corp	320	.050	S.F.	6.05	2.29	8.34	10.20

13 36 Towers

13 36 13 – Metal Towers

13 36 13.50 Control Towers

0010	CONTROL TOWERS									
0020	Modular 12' x 10', incl. instruments				Ea.	810,000			810,000	891,000
0100	Maximum								970,000	1,067,000
0500	With standard 40' tower				▼	1,400,000			1,400,000	1,540,000
1000	Temporary portable control towers, 8' x 12',									
1010	complete with one position communications, minimum				Ea.				266,000	293,000
2000	For fixed facilities, depending on height, minimum								57,000	63,000
2010	Maximum				▼				115,000	127,000

13 42 Building Modules

13 42 63 – Detention Cell Modules

13 42 63.16 Steel Detention Cell Modules

0010	STEEL DETENTION CELL MODULES									
2000	Cells, prefab., 5' to 6' wide, 7' to 8' high, 7' to 8' deep,									
2010	bar front, cat, nat incl. plumbing	E-4	1.50	21.333	Ea.	9,650	1,100	94.50	10,844.50	12,700

13 48 Sound, Vibration, and Seismic Control

13 48 13 – Manufactured Sound and Vibration Control Components

13 48 13.50 Audio Masking

0010	AUDIO MASKING , ocoustical enclosure, 4" thick wall ond ceiling									
0020	8# per S.F., up to 12' spon	3 Carp	72	.333	SF Surf	33	15.30		48.30	59.50
0300	Better quolity ponels, 10.5# per S.F.		64	.375		37	17.20		54.20	67.50
0400	Reverb-chomber, 4" thick, parallel walls		60	.400		46.50	18.35		64.85	79.50
0600	Skewed wall, porollet roof, 4" thick ponels		55	.436		53	20		73	89.50
0700	Skewed walls, skewed roof, 4" layers, 4" air spoce		48	.500		59.50	23		82.50	101
0900	Sound-absorbing ponels, pntd. mtl., 2'-6" x 8', under 1,000 S.F.		215	.112		12.30	5.10		17.40	21.50
1100	Over 1000 S.F.		240	.100		11.85	4.59		16.44	20
1200	Fabric faced		240	.100		9.60	4.59		14.19	17.70
1500	Flexible transporent curtoin, cleor	3 Shee	215	.112		7.45	6.10		13.55	17.55
1600	50% foam		215	.112		10.40	6.10		16.50	21
1700	75% foam		215	.112		10.40	6.10		16.50	21

13 48 Sound, Vibration, and Seismic Control

13 48 13 – Manufactured Sound and Vibration Control Components

13 48 13.50 Audio Masking		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1800	100% foam	3 Shee	215	.112	SF Surf	10.40	6.10		16.50	21
3100	Audio masking system, including speakers, amplification and signal generator									
3110										
3200	Ceiling mounted, 5,000 S.F.	2 Elec	2400	.007	S.F.	1.26	.36		1.62	1.92
3300	10,000 S.F.		2800	.006		1.02	.30		1.32	1.58
3400	Plenum mounted, 5,000 S.F.		3800	.004		1.08	.22		1.30	1.53
3500	10,000 S.F.		4400	.004		.73	.19		.92	1.09

13 49 Radiation Protection

13 49 13 – Integrated X-Ray Shielding Assemblies

13 49 13.50 Lead Sheets

0010	LEAD SHEETS									
0300	Lead sheets, 1/16" thick	2 Lath	135	.119	S.F.	10.05	4.81		14.86	18.15
0400	1/8" thick		120	.133		20	5.40		25.40	30
0500	Lead shielding, 1/4" thick		135	.119		49	4.81		53.81	61
0550	1/2" thick	▼	120	.133	▼	83.50	5.40		88.90	99.50
0950	Lead headed nails (average 1 lb. per sheet)				Lb.	8.05			8.05	8.85
1000	Butt joints in 1/8" lead or thicker, 2" batten strip x 7' long	2 Lath	240	.067	Ea.	28	2.71		30.71	35
1200	X-ray protection, overage radiography or fluorascapy									
1210	room, up to 300 S.F. floor, 1/16" lead, minimum	2 Lath	.25	64	Total	10,100	2,600		12,700	14,900
1500	Maximum, 7'-0" walls	"	.15	106	"	12,200	4,325		16,525	19,800
1600	Deep therapy X-ray room, 250 kV capacity,									
1800	up to 300 S.F. floor, 1/4" lead, minimum	2 Lath	.08	200	Total	28,300	8,125		36,425	43,000
1900	Maximum, 7'-0" walls	"	.06	266	"	34,900	10,800		45,700	54,500

13 49 19 – Lead-Lined Materials

13 49 19.50 Shielding Lead

0010	SHIELDING LEAD									
0100	Laminated lead in wood doors, 1/16" thick, no hardware				S.F.	45			45	49.50
0200	Lead lined door frame, not incl. hardware,									
0210	1/16" thick lead, butt prepared for hardware	1 Lath	2.40	3.333	Ea.	770	135		905	1,050
0850	Window frame with 1/16" lead and voice passage, 36" x 60"	2 Glaz	2	8		5,550	350		5,900	6,625
0870	24" x 36" frame		4	4	▼	2,700	176		2,876	3,250
0900	Lead gypsum board, 5/8" thick with 1/16" lead		160	.100	S.F.	10.15	4.41		14.56	17.85
0910	1/8" lead	▼	140	.114		22	5.05		27.05	31.50
0930	1/32" lead	2 Lath	200	.080		7.60	3.25		10.85	13.15

13 49 21 – Lead Glazing

13 49 21.50 Lead Glazing

0010	LEAD GLAZING									
0600	Lead glass, 1/4" thick, 2.0 mm LE, 12" x 16"	2 Glaz	13	1.231	Ea.	360	54		414	485
0700	24" x 36"		8	2		1,275	88		1,363	1,525
0800	36" x 60"		2	8		3,500	350		3,850	4,375
2000	X-ray viewing panels, clear lead plastic									
2010	7 mm thick, 0.3 mm LE, 2.3 lb./S.F.	H-3	139	.115	S.F.	234	4.53		238.53	264
2020	12 mm thick, 0.5 mm LE, 3.9 lb./S.F.		82	.195		345	7.70		352.70	390
2030	18 mm thick, 0.8 mm LE, 5.9 lb./S.F.		54	.296		395	11.65		406.65	455
2040	22 mm thick, 1.0 mm LE, 7.2 lb./S.F.		44	.364		515	14.30		529.30	585
2050	35 mm thick, 1.5 mm LE, 11.5 lb./S.F.		28	.571		790	22.50		812.50	905
2060	46 mm thick, 2.0 mm LE, 15.0 lb./S.F.		21	.762		1,025	30		1,055	1,175
2090	For panels 12 S.F. to 48 S.F., odd crating charge				Ea.					50

13 49 Radiation Protection

13 49 23 – Integrated RFI/EMI Shielding Assemblies

13 49 23.50 Modular Shielding Partitions		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	MODULAR SHIELDING PARTITIONS									
4000	X-ray barriers, modular, panels mounted within framework for									
4002	attaching to floor, wall or ceiling, upper portion is clear lead									
4005	plastic window panels 48"H, lower portion is opaque leaded									
4008	steel panels 36"H, structural supports not incl.									
4010	1-section barrier, 36"W x 84"H overall									
4020	0.5 mm LE panels	H-3	6.40	2.500	Eo.	5,725	98.50		5,823.50	6,450
4030	0.8 mm LE panels		6.40	2.500		6,350	98.50		6,448.50	7,125
4040	1.0 mm LE panels		5.33	3.002		7,775	118		7,893	8,725
4050	1.5 mm LE panels		5.33	3.002		11,100	118		11,218	12,400
4060	2-section barrier, 72"W x 84"H overall									
4070	0.5 mm LE panels	H-3	4	4	Eo.	11,400	157		11,557	12,800
4080	0.8 mm LE panels		4	4		12,700	157		12,857	14,100
4090	1.0 mm LE panels		3.56	4.494		15,600	177		15,777	17,400
5000	1.5 mm LE panels	▼	3.20	5	▼	22,200	197		22,397	24,700
5010	3-section barrier, 108"W x 84"H overall									
5020	0.5 mm LE panels	H-3	3.20	5	Eo.	17,200	197		17,397	19,200
5030	0.8 mm LE panels		3.20	5		19,000	197		19,197	21,200
5040	1.0 mm LE panels		2.67	5.993		23,300	236		23,536	26,100
5050	1.5 mm LE panels	▼	2.46	6.504	▼	33,200	256		33,456	36,900
7000	X-ray barriers, mobile, mounted within framework w/costers on									
7005	bottom, clear lead plastic window panels on upper portion,									
7010	opaque on lower, 30"W x 75"H overall, incl. framework									
7020	24"H upper w/0.5 mm LE, 48"H lower w/0.8 mm LE	1 Corp	16	.500	Eo.	3,700	23		3,723	4,075
7030	48"W x 75"H overall, incl. framework									
7040	36"H upper w/0.5 mm LE, 36"H lower w/0.8 mm LE	1 Corp	16	.500	Eo.	6,000	23		6,023	6,625
7050	36"H upper w/1.0 mm LE, 36"H lower w/1.5 mm LE	"	16	.500	"	7,100	23		7,123	7,825
7060	72"W x 75"H overall, incl. framework									
7070	36"H upper w/0.5 mm LE, 36"H lower w/0.8 mm LE	1 Corp	16	.500	Eo.	7,100	23		7,123	7,825
7080	36"H upper w/1.0 mm LE, 36"H lower w/1.5 mm LE	"	16	.500	"	8,900	23		8,923	9,800

13 49 33 – Radio Frequency Shielding

13 49 33.50 Shielding, Radio Frequency

0010	SHIELDING, RADIO FREQUENCY									
0020	Prefabricated, galvanized steel	2 Corp	375	.043	SF Surf	4.46	1.96		6.42	7.95
0040	5 oz., copper floor panel		480	.033		3.68	1.53		5.21	6.40
0050	5 oz., copper wall/ceiling panel		155	.103		3.68	4.73		8.41	11.35
0100	12 oz., copper floor panel		470	.034		7.85	1.56		9.41	11.05
0110	12 oz., copper wall/ceiling panel		140	.114	▼	7.85	5.25		13.10	16.75
0150	Door, copper/wood laminated, 4' x 7'	▼	1.50	10.667	Eo.	7,400	490		7,890	8,875

13 53 Meteorological Instrumentation

13 53 09 – Weather Instrumentation

13 53 09.50 Weather Station

0010	WEATHER STATION									
0020	Remote recording, solar powered, with rain gauge & display, 400 ft range				Eo.	1,625			1,625	1,775
0100	1 mile range				"	1,825			1,825	2,025

Division Notes

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Estimating Tips

General

- Many products in Division 14 will require some type of support or blocking for installation not included with the item itself. Examples are supports for conveyors or tube systems, attachment points for lifts, and footings for hoists or cranes. Add these supports in the appropriate division.

14 10 00 Dumbwaiters

14 20 00 Elevators

- Dumbwaiters and elevators are estimated and purchased in a method similar to buying a car. The manufacturer has a base unit with standard features. Added to this base unit price will be whatever options the owner or specifications require. Increased load capacity, additional vertical travel, additional stops, higher speed, and cab finish options are items to be considered. When developing an estimate for dumbwaiters and elevators, remember that some items needed by the installers may have to be included as part of the general contract.

Examples are:

- shaftway
- rail support brackets
- machine room
- electrical supply
- sill angles
- electrical connections
- pits
- roof penthouses
- pit ladders

Check the job specifications and drawings before pricing.

- Installation of elevators and handicapped lifts in historic structures can require significant additional costs. The associated structural requirements may involve cutting into and repairing finishes, mouldings, flooring, etc. The estimator must account for these special conditions.

14 30 00 Escalators and Moving Walks

- Escalators and moving walks are specialty items installed by specialty contractors. There are numerous options associated with these items. For specific options, contact a manufacturer or contractor. In a method similar to estimating dumbwaiters and elevators, you should verify the extent of general contract work and add items as necessary.

14 40 00 Lifts

14 90 00 Other

Conveying Equipment

- Products such as correspondence lifts, chutes, and pneumatic tube systems, as well as other items specified in this subdivision, may require trained installers. The general contractor might not have any choice as to who will perform the installation or when it will be performed. Long lead times are often required for these products, making early decisions in scheduling necessary.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

14 11 Manual Dumbwaiters

14 11 10 – Hand Operated Dumbwaiters

14 11 10.20 Manual Dumbwaiters		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	MANUAL DUMBWAITERS									
0020	2 stop, minimum	2 Elev	.75	21.333	Eo.	2,925	1,575		4,500	5,600
0100	Maximum		.50	32	"	6,650	2,375		9,025	10,900
0300	For each additional stop, add		.75	21.333	Stop	1,050	1,575		2,625	3,550

14 12 Electric Dumbwaiters

14 12 10 – Dumbwaiters

14 12 10.10 Electric Dumbwaiters

0010	ELECTRIC DUMBWAITERS									
0020	2 stop, minimum	2 Elev	.13	123	Eo.	7,375	9,125		16,500	21,800
0100	Maximum		.11	145	"	22,200	10,800		33,000	40,500
0600	For each additional stop, add		.54	29.630	Stop	3,250	2,200		5,450	6,850
0750	Correspondence lift, 1 floor, 2 stop, 45 lb. capacity	2 Elec	.20	80	Eo.	8,350	4,275		12,625	15,600

14 21 Electric Traction Elevators

14 21 13 – Electric Traction Freight Elevators

14 21 13.10 Electric Traction Freight Elevators and Options

0010	ELECTRIC TRACTION FREIGHT ELEVATORS AND OPTIONS					R142000-10							
0425	Electric freight, base unit, 4000 lb., 200 fpm, 4 stop, std. fin.					2 Elev	.05	320	Eo.	106,500	23,700	130,200	153,000
0450	For 5000 lb. capacity, add									5,750		5,750	6,325
0500	For 6000 lb. capacity, add									14,400		14,400	15,800
0525	For 7000 lb. capacity, add									17,900		17,900	19,700
0550	For 8000 lb. capacity, add									35,800		35,800	39,300
0575	For 10000 lb. capacity, add									30,000		30,000	33,000
0600	For 12000 lb. capacity, add									36,400		36,400	40,100
0625	For 16000 lb. capacity, add									44,100		44,100	48,500
0650	For 20000 lb. capacity, add									49,100		49,100	54,000
0675	For increased speed, 250 fpm, add									17,000		17,000	18,700
0700	300 fpm, geared electric, add									21,400		21,400	23,600
0725	350 fpm, geared electric, add									26,100		26,100	28,700
0750	400 fpm, geared electric, add									30,500		30,500	33,600
0775	500 fpm, gearless electric, add									37,600		37,600	41,300
0800	600 fpm, gearless electric, add									45,000		45,000	49,500
0825	700 fpm, gearless electric, add									53,500		53,500	59,000
0850	800 fpm, gearless electric, add									61,500		61,500	68,000
0875	For class "B" loading, add									4,975		4,975	5,475
0900	For class "C-1" loading, add									7,100		7,100	7,825
0925	For class "C-2" loading, add									8,150		8,150	8,975
0950	For class "C-3" loading, add									10,800		10,800	11,900
0975	For travel over 40 V.L.F., add					2 Elev	7.25	2.207	V.L.F.	660	164	824	970
1000	For number of stops over 4, add					"	.27	59.259	Stop	4,075	4,400	8,475	11,100

14 21 23 – Electric Traction Passenger Elevators

14 21 23.10 Electric Traction Passenger Elevators and Options

0010	ELECTRIC TRACTION PASSENGER ELEVATORS AND OPTIONS									
1625	Electric pass., base unit, 2000 lb., 200 fpm, 4 stop, std. fin.	2 Elev	.05	320	Eo.	90,000	23,700		113,700	134,500
1650	For 2500 lb. capacity, add					3,675			3,675	4,050
1675	For 3000 lb. capacity, add					4,325			4,325	4,750
1700	For 3500 lb. capacity, add					5,500			5,500	6,050
1725	For 4000 lb. capacity, add					6,700			6,700	7,350

14 21 Electric Traction Elevators

14 21 23 – Electric Traction Passenger Elevators

14 21 23.10 Electric Traction Passenger Elevators and Options		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1750	For 4500 lb. capacity, add				Ea.	8,800			8,800	9,675
1775	For 5000 lb. capacity, add					11,200			11,200	12,300
1800	For increased speed, 250 fpm, geared electric, add					4,975			4,975	5,475
1825	300 fpm, geared electric, add					7,825			7,825	8,600
1850	350 fpm, geared electric, add					9,000			9,000	9,900
1875	400 fpm, geared electric, add					11,800			11,800	12,900
1900	500 fpm, gearless electric, add					27,000			27,000	29,700
1925	600 fpm, gearless electric, add					42,800			42,800	47,100
1950	700 fpm, gearless electric, add					48,300			48,300	53,000
1975	800 fpm, gearless electric, add					53,000			53,000	58,500
2000	For travel over 40 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	805	164		969	1,125
2025	For number of stops over 4, add		.27	59.259	Stop	5,550	4,400		9,950	12,700
2400	Electric hospital, base unit, 4000 lb., 200 fpm, 4 stop, std fin.		.05	320	Ea.	76,000	23,700		99,700	119,000
2425	For 4500 lb. capacity, add					5,225			5,225	5,750
2450	For 5000 lb. capacity, add					6,850			6,850	7,525
2475	For increased speed, 250 fpm, geared electric, add					5,075			5,075	5,575
2500	300 fpm, geared electric, add					7,750			7,750	8,525
2525	350 fpm, geared electric, add					8,950			8,950	9,825
2550	400 fpm, geared electric, add					11,700			11,700	12,800
2575	500 fpm, gearless electric, add					31,100			31,100	34,200
2600	600 fpm, gearless electric, add					45,300			45,300	49,800
2625	700 fpm, gearless electric, add					50,000			50,000	55,000
2650	800 fpm, gearless electric, add					56,000			56,000	61,500
2675	For travel over 40 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	455	164		619	745
2700	For number of stops over 4, add	"	.27	59.259	Stop	4,150	4,400		8,550	11,100

14 21 33 – Electric Traction Residential Elevators

14 21 33.20 Residential Elevators

0010	RESIDENTIAL ELEVATORS									
7000	Residential, cab type, 1 floor, 2 stop, minimum	2 Elev	.20	80	Ea.	11,200	5,925		17,125	21,300
7100	Maximum		.10	160		19,000	11,900		30,900	38,700
7200	2 floor, 3 stop, minimum		.12	133		16,700	9,875		26,575	33,200
7300	Maximum	▼	.06	266	▼	27,200	19,800		47,000	59,500

14 24 Hydraulic Elevators

14 24 13 – Hydraulic Freight Elevators

14 24 13.10 Hydraulic Freight Elevators and Options

0010	HYDRAULIC FREIGHT ELEVATORS AND OPTIONS									
1025	Hydraulic freight, base unit, 2000 lb., 50 fpm, 2 stop, std. fin.	2 Elev	.10	160	Ea.	78,500	11,900		90,400	104,500
1050	For 2500 lb. capacity, add					3,775			3,775	4,175
1075	For 3000 lb. capacity, add					6,575			6,575	7,225
1100	For 3500 lb. capacity, add					11,700			11,700	12,800
1125	For 4000 lb. capacity, add					12,600			12,600	13,900
1150	For 4500 lb. capacity, add					14,800			14,800	16,300
1175	For 5000 lb. capacity, add					18,800			18,800	20,700
1200	For 6000 lb. capacity, add					23,000			23,000	25,300
1225	For 7000 lb. capacity, add					28,100			28,100	31,000
1250	For 8000 lb. capacity, add					31,700			31,700	34,900
1275	For 10000 lb. capacity, add					39,100			39,100	43,000
1300	For 12000 lb. capacity, add					50,500			50,500	56,000
1325	For 16000 lb. capacity, add					69,000			69,000	76,000

14 24 Hydraulic Elevators

14 24 13 – Hydraulic Freight Elevators

14 24 13.10 Hydraulic Freight Elevators and Options		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
					Ea.		Labor	Equipment		
1350	For 20000 lb. capacity, add					83,500			83,500	92,000
1375	For increased speed, 100 fpm, add					1,600			1,600	1,775
1400	125 fpm, add					3,525			3,525	3,875
1425	150 fpm, add					4,575			4,575	5,050
1450	175 fpm, add					7,350			7,350	8,075
1475	For class "B" loading, add					4,725			4,725	5,200
1500	For class "C-1" loading, add					7,075			7,075	7,775
1525	For class "C-2" loading, add					8,125			8,125	8,925
1550	For class "C-3" loading, add					10,400			10,400	11,500
1575	For travel over 20 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	1,250	164		1,414	1,625
1600	For number of stops over 2, add	"	.27	59.259	Stop	3,375	4,400		7,775	10,300

14 24 23 – Hydraulic Passenger Elevators

14 24 23.10 Hydraulic Passenger Elevators and Options

0010 HYDRAULIC PASSENGER ELEVATORS AND OPTIONS										
2050	Hyd. pass., base unit, 1500 lb., 100 fpm, 2 stop, std. fin.	2 Elev	.10	160	Ea.	38,600	11,900		50,500	60,500
2075	For 2000 lb. capacity, add					1,425			1,425	1,575
2100	For 2500 lb. capacity, add					2,750			2,750	3,025
2125	For 3000 lb. capacity, add					3,900			3,900	4,300
2150	For 3500 lb. capacity, add					6,575			6,575	7,250
2175	For 4000 lb. capacity, add					7,875			7,875	8,650
2200	For 4500 lb. capacity, add					10,300			10,300	11,300
2225	For 5000 lb. capacity, add					14,500			14,500	16,000
2250	For increased speed, 125 fpm, add					2,075			2,075	2,275
2275	150 fpm, add					2,800			2,800	3,075
2300	175 fpm, add					4,625			4,625	5,100
2325	200 fpm, add					8,850			8,850	9,725
2350	For travel over 12 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	740	164		904	1,050
2375	For number of stops over 2, add		.27	59.259	Stop	1,800	4,400		6,200	8,575
2725	Hydraulic hospital, base unit, 4000 lb., 100 fpm, 2 stop, std. fin.	▼	.10	160	Ea.	57,000	11,900		68,900	81,000
2775	For 4500 lb. capacity, add					6,400			6,400	7,050
2800	For 5000 lb. capacity, add					9,375			9,375	10,300
2825	For increased speed, 125 fpm, add					2,525			2,525	2,775
2850	150 fpm, add					3,300			3,300	3,625
2875	175 fpm, add					5,500			5,500	6,050
2900	200 fpm, add					8,050			8,050	8,850
2925	For travel over 12 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	545	164		709	845
2950	For number of stops over 2, add	"	.27	59.259	Stop	4,000	4,400		8,400	11,000

14 27 Custom Elevator Cabs and Doors

14 27 13 – Custom Elevator Cab Finishes

14 27 13.10 Cab Finishes

0010 CAB FINISHES										
3325	Passenger elevator cab finishes (based on 3500 lb. cab size)									
3350	Acrylic panel ceiling				Ea.	730			730	800
3375	Aluminum eggcrate ceiling					890			890	980
3400	Stainless steel doors					3,775			3,775	4,150
3425	Carpet flooring					595			595	655
3450	Epoxy flooring					450			450	495
3475	Quarry tile flooring					850			850	935
3500	Slate flooring					1,525			1,525	1,675

14 27 Custom Elevator Cabs and Doors

14 27 13 – Custom Elevator Cab Finishes

14 27 13.10 Cab Finishes		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
3525	Textured rubber flooring				Ea.	635			635	700
3550	Stainless steel walls					4,275			4,275	4,700
3575	Stainless steel returns at door					1,125			1,125	1,225
4450	Hospital elevator cab finishes (based on 3500 lb. cab size)									
4475	Aluminum eggcrate ceiling				Eo.	890			890	980
4500	Stainless steel doors					3,775			3,775	4,150
4525	Epoxy flooring					450			450	495
4550	Quarry tile flooring					850			850	935
4575	Textured rubber flooring					635			635	700
4600	Stainless steel walls					4,375			4,375	4,800
4625	Stainless steel returns at door					940			940	1,025

14 28 Elevator Equipment and Controls

14 28 10 – Elevator Equipment and Control Options

14 28 10.10 Elevator Controls and Doors

0010	ELEVATOR CONTROLS AND DOORS									
2975	Passenger elevator options									
3000	2 car group automatic controls	2 Elev	.66	24.242	Eo.	4,800	1,800		6,600	7,975
3025	3 car group automatic controls		.44	36.364		9,200	2,700		11,900	14,100
3050	4 car group automatic controls		.33	48.485		18,400	3,600		22,000	25,700
3075	5 car group automatic controls		.26	61.538		33,300	4,575		37,875	43,500
3100	6 car group automatic controls		.22	72.727		67,500	5,400		72,900	82,000
3125	Intercom service		3	5.333		995	395		1,390	1,700
3150	Duplex car selective collective		.66	24.242		8,500	1,800		10,300	12,100
3175	Center opening 1 speed doors		2	8		1,900	595		2,495	3,000
3200	Center opening 2 speed doors		2	8		2,650	595		3,245	3,800
3225	Rear opening doors (opposite front)		2	8		4,050	595		4,645	5,375
3250	Side opening 2 speed doors		2	8		4,300	595		4,895	5,625
3275	Automatic emergency power switching		.66	24.242		1,150	1,800		2,950	3,950
3300	Manual emergency power switching		8	2		495	148		643	765
3625	Hall finishes, stainless steel doors					1,625			1,625	1,800
3650	Stainless steel frames					1,400			1,400	1,525
3675	12 month maintenance contract								3,600	3,950
3700	Signal devices, hall lanterns	2 Elev	8	2		505	148		653	775
3725	Position indicators, up to 3		9.40	1.702		470	126		596	705
3750	Position indicators, per each over 3		32	.500		420	37		457	515
3775	High speed heavy duty door opener					3,200			3,200	3,525
3800	Variable voltage, O.H. gearless machine, min.	2 Elev	.16	100		51,500	7,425		58,925	67,500
3815	Maximum		.07	228		80,000	16,900		96,900	113,500
3825	Base metal installed geared machine		.33	48.485		49,100	3,600		52,700	59,500
3850	Freight elevator options									
3875	Doors, bi-parting	2 Elev	.66	24.242	Eo.	7,475	1,800		9,275	10,900
3900	Power operated door and gate	"	.66	24.242		23,700	1,800		25,500	28,700
3925	Finishes, steel plate floor					1,800			1,800	1,975
3950	14 ga. 1/4" x 4' steel plate walls					1,950			1,950	2,150
3975	12 month maintenance contract								3,600	3,950
4000	Signal devices, hall lanterns	2 Elev	8	2		495	148		643	765
4025	Position indicators, up to 3		9.40	1.702		485	126		611	720
4050	Position indicators, per each over 3		32	.500		425	37		462	520
4075	Variable voltage base metal installed geared machine		.66	24.242		19,500	1,800		21,300	24,100
4100	Hospital elevator options									

14 28 Elevator Equipment and Controls

14 28 10 – Elevator Equipment and Control Options

14 28 10.10 Elevator Controls and Doors

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4125	2 cor group automatic controls	2 Elev	.66	24.242	Eo.	4,800	1,800		6,600	8,000
4150	3 cor group automatic controls		.44	36.364		9,200	2,700		11,900	14,100
4175	4 cor group automatic controls		.33	48.485		18,400	3,600		22,000	25,600
4200	5 cor group automatic controls		.26	61.538		33,300	4,575		37,875	43,500
4225	6 cor group automatic controls		.22	72.727		67,500	5,400		72,900	82,000
4250	Intercom service		3	5.333		990	395		1,385	1,700
4275	Duplex cor selective collective		.66	24.242		8,500	1,800		10,300	12,000
4300	Center opening 1 speed doors		2	8		1,900	595		2,495	2,975
4325	Center opening 2 speed doors		2	8		2,475	595		3,070	3,625
4350	Rear opening doors (opposite front)		2	8		4,075	595		4,670	5,375
4375	Side opening 2 speed doors		2	8		6,150	595		6,745	7,675
4400	Automatic emergency power switching		.66	24.242		1,125	1,800		2,925	3,925
4425	Manual emergency power switching		8	2		485	148		633	755
4675	Hall finishes, stainless steel doors					1,575			1,575	1,725
4700	Stainless steel frames					1,400			1,400	1,550
4725	12 month maintenance contract								3,600	3,950
4750	Signal devices, hall lanterns	2 Elev	8	2		475	148		623	745
4775	Position indicators, up to 3		9.40	1.702		470	126		596	705
4800	Position indicators, per each over 3		32	.500		415	37		452	515
4825	High speed heavy duty door opener					3,200			3,200	3,525
4850	Variable voltage, O.H. gearless machine, min.	2 Elev	.16	100		51,000	7,425		58,425	67,000
4865	Maximum		.07	228		78,500	16,900		95,400	112,000
4875	Bosement installed geared machine		.33	48.485		20,100	3,600		23,700	27,500
5000	Drilling for piston, casing included, 18" diameter	B-48	80	.700	V.L.F.	53.50	29	36.50	119	144

14 31 Escalators

14 31 10 – Glass and Steel Escalators

14 31 10.10 Escalators

0010	ESCALATORS	R143110-10								
1000	Gloss, 32" wide x 10' floor to floor height	M-1	.07	457	Eo.	83,500	32,200	685	116,385	140,500
1010	48" wide x 10' floor to floor height		.07	457		89,500	32,200	685	122,385	147,500
1020	32" wide x 15' floor to floor height		.06	533		87,500	37,600	800	125,900	153,500
1030	48" wide x 15' floor to floor height		.06	533		92,500	37,600	800	130,900	158,500
1040	32" wide x 20' floor to floor height		.05	653		92,500	46,000	980	139,480	172,000
1050	48" wide x 20' floor to floor height		.05	653		100,500	46,000	980	147,480	180,500
1060	32" wide x 25' floor to floor height		.04	800		101,000	56,500	1,200	158,700	197,000
1070	48" wide x 25' floor to floor height		.04	800		116,500	56,500	1,200	174,200	214,000
1080	Enameled steel, 32" wide x 10' floor to floor height		.07	457		89,500	32,200	685	122,385	147,500
1090	48" wide x 10' floor to floor height		.07	457		97,000	32,200	685	129,885	155,500
1110	32" wide x 15' floor to floor height		.06	533		94,500	37,600	800	132,900	161,000
1120	48" wide x 15' floor to floor height		.06	533		100,000	37,600	800	138,400	167,000
1130	32" wide x 20' floor to floor height		.05	653		100,000	46,000	980	146,980	180,500
1140	48" wide x 20' floor to floor height		.05	653		108,500	46,000	980	155,480	189,500
1150	32" wide x 25' floor to floor height		.04	800		108,500	56,500	1,200	166,200	205,500
1160	48" wide x 25' floor to floor height		.04	800		125,000	56,500	1,200	182,700	223,500
1170	Stainless steel, 32" wide x 10' floor to floor height		.07	457		94,500	32,200	685	127,385	153,000
1180	48" wide x 10' floor to floor height		.07	457		101,500	32,200	685	134,385	160,500
1500	32" wide x 15' floor to floor height		.06	533		100,000	37,600	800	138,400	167,000
1700	48" wide x 15' floor to floor height		.06	533		105,000	37,600	800	143,400	172,500
1750	32" wide x 18' floor to floor height		.05	615		102,500	43,300	925	146,725	178,500
1775	48" wide x 18' floor to floor height		.05	615		111,500	43,300	925	155,725	188,500

14 31 Escalators

14 31 10 – Glass and Steel Escalators

14 31 10.10 Escalators		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2300	32" wide x 25' floor to floor height	M-1	.04	800	Ea.	114,000	56,500	1,200	171,700	211,500
2500	48" wide x 25' floor to floor height		.04	800		131,500	56,500	1,200	189,200	230,500

14 32 Moving Walks

14 32 10 – Moving Walkways

14 32 10.10 Moving Walks

0010	MOVING WALKS	R143210-20								
0020	Walk, 27" tread width, minimum	M-1	6.50	4.923	L.F.	850	345	7.40	1,202.40	1,475
0100	300' to 500', maximum		4.43	7.223		1,175	510	10.85	1,695.85	2,075
0300	48" tread width walk, minimum		4.43	7.223		1,925	510	10.85	2,445.85	2,900
0400	100' to 350', maximum		3.82	8.377		2,250	590	12.55	2,852.55	3,375
0600	Ramp, 12° incline, 36" tread width, minimum		5.27	6.072		1,575	430	9.10	2,014.10	2,375
0700	70' to 90' maximum		3.82	8.377		2,250	590	12.55	2,852.55	3,375
0900	48" tread width, minimum		3.57	8.964		2,300	630	13.45	2,943.45	3,475
1000	40' to 70', maximum		2.91	10.997		2,900	775	16.50	3,691.50	4,375

14 42 Wheelchair Lifts

14 42 13 – Inclined Wheelchair Lifts

14 42 13.10 Inclined Wheelchair Lifts and Stairclimbers

0010	INCLINED WHEELCHAIR LIFTS AND STAIRCLIMBERS									
7700	Stair climber (chair lift), single seat, minimum	2 Elev	1	16	Ea.	5,325	1,175		6,500	7,650
7800	Maximum		.20	80		7,350	5,925		13,275	17,000
8700	Stair lift, minimum		1	16		14,500	1,175		15,675	17,700
8900	Maximum	▼	.20	80	▼	22,900	5,925		28,825	34,100

14 42 16 – Vertical Wheelchair Lifts

14 42 16.10 Wheelchair Lifts

0010	WHEELCHAIR LIFTS									
8000	Wheelchair lift, minimum	2 Elev	1	16	Ea.	7,325	1,175		8,500	9,825
8500	Maximum	"	.50	32	"	17,300	2,375		19,675	22,600

14 45 Vehicle Lifts

14 45 10 – Hydraulic Vehicle Lifts

14 45 10.10 Hydraulic Lifts

0010	HYDRAULIC LIFTS									
2200	Single post, 8000 lb. capacity	L-4	.40	60	Ea.	5,500	2,575		8,075	10,100
2810	Double post, 6000 lb. capacity		2.67	8.989		7,750	385		8,135	9,125
2815	9000 lb. capacity		2.29	10.480		18,400	450		18,850	20,900
2820	15,000 lb. capacity		2	12		20,800	515		21,315	23,600
2822	26,000 lb. capacity		1.80	13.333		13,700	575		14,275	16,000
2825	30,000 lb. capacity		1.60	15		45,900	645		46,545	51,500
2830	Ramp style, 4 post, 25,000 lb. capacity		2	12		18,000	515		18,515	20,600
2835	35,000 lb. capacity		1	24		83,500	1,025		84,525	93,500
2840	50,000 lb. capacity		1	24		93,500	1,025		94,525	104,500
2845	75,000 lb. capacity		1	24		108,500	1,025		109,525	121,000
2850	For drive thru tracks, add, minimum					1,150			1,150	1,275
2855	Maximum					1,975			1,975	2,175
2860	Ramp extensions, 3' (set of 2)					945			945	1,050

14 45 Vehicle Lifts

14 45 10 – Hydraulic Vehicle Lifts

14 45 10.10 Hydraulic Lifts		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2865	Rolling jack platform				Ea.	3,300			3,300	3,625
2870	Electric/hydraulic jacking beam					8,825			8,825	9,700
2880	Scissor lift, portable, 6000 lb. capacity					8,650			8,650	9,525

14 51 Correspondence and Parcel Lifts

14 51 10 – Electric Correspondence and Parcel Lifts

14 51 10.10 Correspondence Lifts

0010	CORRESPONDENCE LIFTS									
0020	1 floor, 2 stop, 25 lb. capacity, electric	2 Elev	.20	80	Ea.	6,500	5,925		12,425	16,000
0100	Hand, 5 lb. capacity	"	.20	80	"	2,500	5,925		8,425	11,600

14 51 10.20 Parcel Lifts

0010	PARCEL LIFTS									
0020	20" x 20", 100 lb. capacity, electric, per floor	2 Mill	.25	64	Ea.	10,000	3,075		13,075	15,500

14 91 Facility Chutes

14 91 33 – Laundry and Linen Chutes

14 91 33.10 Chutes

0011	CHUTES, linen, trash or refuse									
0050	Aluminized steel, 16 ga., 18" diameter	2 Shee	3.50	4.571	Floor	1,700	250		1,950	2,250
0100	24" diameter		3.20	5		1,775	274		2,049	2,375
0200	30" diameter		3	5.333		2,125	292		2,417	2,775
0300	36" diameter		2.80	5.714		2,625	315		2,940	3,375
0400	Galvanized steel, 16 ga., 18" diameter		3.50	4.571		1,000	250		1,250	1,475
0500	24" diameter		3.20	5		1,125	274		1,399	1,675
0600	30" diameter		3	5.333		1,275	292		1,567	1,850
0700	36" diameter		2.80	5.714		1,500	315		1,815	2,125
0800	Stainless steel, 18" diameter		3.50	4.571		3,000	250		3,250	3,675
0900	24" diameter		3.20	5		3,150	274		3,424	3,875
1000	30" diameter		3	5.333		3,750	292		4,042	4,575
1005	36" diameter		2.80	5.714		3,950	315		4,265	4,800
1200	Linen chute battam collector, aluminized steel		4	4	Ea.	1,400	219		1,619	1,875
1300	Stainless steel		4	4		1,800	219		2,019	2,300
1500	Refuse, battom happer, aluminized steel, 18" diameter		3	5.333		1,025	292		1,317	1,575
1600	24" diameter		3	5.333		1,250	292		1,542	1,825
1800	36" diameter		3	5.333		2,500	292		2,792	3,200

14 91 82 – Trash Chutes

14 91 82.10 Trash Chutes and Accessories

0010	TRASH CHUTES AND ACCESSORIES									
2900	Package chutes, spiral type, minimum	2 Shee	4.50	3.556	Floor	2,425	194		2,619	2,975
3000	Maximum	"	1.50	10.667	"	6,325	585		6,910	7,875

14 92 Pneumatic Tube Systems

14 92 10 – Conventional, Automatic and Computer Controlled Pneumatic Tube Systems

14 92 10.10 Pneumatic Tube Systems		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
PNEUMATIC TUBE SYSTEMS							Labor	Equipment		
0010										
0020	100' long, single tube, 2 stations, stock									
0100	3" diameter	2 Stpi	.12	133	Total	6,600	7,800		14,400	19,100
0300	4" diameter	"	.09	177	"	7,450	10,400		17,850	23,900
0400	Twin tube, two stations or more, conventional system									
0600	2-1/2" round	2 Stpi	62.50	.256	L.F.	36	15		51	62
0700	3" round		46	.348		36	20.50		56.50	70
0900	4" round		49.60	.323		44	18.85		62.85	77
1000	4" x 7" oval		37.60	.426		76	25		101	121
1050	Add for blower		2	8	System	5,200	470		5,670	6,425
1110	Plus for each round station, odd		7.50	2.133	Eq.	1,275	125		1,400	1,600
1150	Plus for each oval station, odd		7.50	2.133	"	1,275	125		1,400	1,600
1200	Alternate pricing method: base cost, minimum		.75	21.333	Total	6,375	1,250		7,625	8,900
1300	Maximum		.25	64	"	12,700	3,750		16,450	19,600
1500	Plus total system length, odd, minimum		93.40	.171	L.F.	8.20	10		18.20	24
1600	Maximum		37.60	.426	"	24.50	25		49.50	64
1800	Completely automatic system, 4" round, 15 to 50 stations		.29	55.172	Station	20,100	3,225		23,325	27,000
2200	51 to 144 stations		.32	50		15,600	2,925		18,525	21,600
2400	6" round or 4" x 7" oval, 15 to 50 stations		.24	66.667		25,200	3,900		29,100	33,600
2800	51 to 144 stations		.23	69.565		21,100	4,075		25,175	29,400

Division Notes

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Estimating Tips

Pipe for fire protection and all uses is located in Subdivisions 21 11 13 and 22 11 13.

The labor adjustment factors listed in Subdivision 22 01 02.20 also apply to Division 21.

Many, but not all, areas in the U.S. require backflow protection in the fire system. It is advisable to check local building codes for specific requirements.

For your reference, the following is a list of the most applicable Fire Codes and Standards which may be purchased from the NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1: Uniform Fire Code
 NFPA 10: Portable Fire Extinguishers
 NFPA 11: Low-, Medium-, and High-Expansion Foam
 NFPA 12: Carbon Dioxide Extinguishing Systems (Also companion 12A)
 NFPA 13: Installation of Sprinkler Systems (Also companion 13D, 13E, and 13R)
 NFPA 14: Installation of Standpipe and Hose Systems
 NFPA 15: Water Spray Fixed Systems for Fire Protection
 NFPA 16: Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
 NFPA 17: Dry Chemical Extinguishing Systems (Also companion 17A)
 NFPA 18: Wetting Agents

NFPA 20: Installation of Stationary Pumps for Fire Protection

NFPA 22: Water Tanks for Private Fire Protection

NFPA 24: Installation of Private Fire Service Mains and their Appurtenances

NFPA 25: Inspection, Testing and Maintenance of Water-Based Fire Protection

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 21.

21 05 Common Work Results for Fire Suppression

21 05 23 – General-Duty Valves for Water-Based Fire-Suppression Piping

21 05 23.50 General-Duty Valves		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	GENERAL-DUTY VALVES, for water-based fire suppression									
6200	Valves and campanents									
6500	Check, swing, C.I. body, brass fittings, auta. ball drip									
6520	4" size	Q-12	3	5.333	Ea.	335	266		601	765
6800	Check, wafer, butterfly type, C.I. body, branze fittings									
6820	4" size	Q-12	4	4	Ea.	460	199		659	805

21 11 Facility Fire-Suppression Water-Service Piping

21 11 16 – Facility Fire Hydrants

21 11 16.50 Fire Hydrants for Buildings

0010	FIRE HYDRANTS FOR BUILDINGS									
3750	Hydrants, wall, w/caps, single, flush, polished brass									
3800	2-1/2" x 2-1/2"	Q-12	5	3.200	Ea.	193	160		353	455
3840	2-1/2" x 3"	"	5	3.200		410	160		570	690
3900	For polished chrome, add				▼	20%				
3950	Double, flush, polished brass									
4000	2-1/2" x 2-1/2" x 4"	Q-12	5	3.200	Ea.	545	160		705	840
4040	2-1/2" x 2-1/2" x 6"	"	4.60	3.478		785	173		958	1,125
4200	For polished chrome, add					10%				
4350	Double, projecting, polished brass									
4400	2-1/2" x 2-1/2" x 4"	Q-12	5	3.200	Ea.	242	160		402	505
4450	2-1/2" x 2-1/2" x 6"	"	4.60	3.478	"	495	173		668	805
4460	Valve control, dbl. flush/projecting hydrant, cap &									
4470	chain, extension rod & cplg., escutcheon, polished brass	Q-12	8	2	Ea.	288	99.50		387.50	465

21 11 19 – Fire-Department Connections

21 11 19.50 Connections for the Fire-Department

0010	CONNECTIONS FOR THE FIRE-DEPARTMENT									
7140	Standpipe connections, wall, w/plugs & chains									
7160	Single, flush, brass, 2-1/2" x 2-1/2"	Q-12	5	3.200	Ea.	151	160		311	410
7180	2-1/2" x 3"	"	5	3.200	"	156	160		316	415
7240	For polished chrome, add					15%				
7280	Double, flush, polished brass									
7300	2-1/2" x 2-1/2" x 4"	Q-12	5	3.200	Ea.	495	160		655	785
7330	2-1/2" x 2-1/2" x 6"	"	4.60	3.478	"	690	173		863	1,025
7400	For polished chrome, add					15%				
7440	For sill cock combination, add				Ea.	86			86	94.50
7900	Three way, flush, polished brass									
7920	2-1/2" (3) x 4"	Q-12	4.80	3.333	Ea.	1,575	166		1,741	2,000
7930	2-1/2" (3) x 6"	"	4.80	3.333		1,575	166		1,741	2,000
8000	For polished chrome, add				▼	9%				
8020	Three way, projecting, polished brass									
8040	2-1/2"(3) x 4"	Q-12	4.80	3.333	Ea.	1,400	166		1,566	1,800

21 12 Fire-Suppression Standpipes

21 12 13 – Fire-Suppression Hoses and Nozzles

21 12 13.50 Fire Hoses and Nozzles		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	FIRE HOSES AND NOZZLES									
0200	Adapters, rough brass, straight hose threads									
0220	One piece, female to male, rackler lugs									
0240	1" x 1"				Ea.	46			46	50.50
0320	2" x 2"					42			42	46
0380	2-1/2" x 2-1/2"				↓	19			19	21
2200	Hose, less couplings									
2260	Synthetic jacket, lined, 300 lb. test, 1-1/2" diameter	Q-12	2600	.006	L.F.	3.09	.31		3.40	3.86
2280	2-1/2" diameter		2200	.007		5.30	.36		5.66	6.40
2360	High strength, 500 lb. test, 1-1/2" diameter		2600	.006		3.18	.31		3.49	3.96
2380	2-1/2" diameter		2200	.007	↓	5.65	.36		6.01	6.75
5600	Nozzles, brass									
5620	Adjustable fog, 3/4" booster line				Ea.	106			106	116
5630	1" booster line					125			125	137
5640	1-1/2" leader line					75.50			75.50	83
5660	2-1/2" direct connection					143			143	158
5680	2-1/2" ploypipe nazzle				↓	209			209	230
5780	For chrome plated, add					8%				
5850	Electrical fire, adjustable fog, no shack									
5900	1-1/2"				Ea.	390			390	430
5920	2-1/2"					525			525	575
5980	For polished chrome, add				↓	6%				
6200	Heavy duty, comb. adj. fog and str. stream, with handle									
6210	1" booster line				Ea.	375			375	410

21 12 19 – Fire-Suppression Hose Racks

21 12 19.50 Fire Hose Racks

0010	FIRE HOSE RACKS									
2600	Hose rack, swinging, for 1-1/2" diameter hose,									
2620	Enameled steel, 50' & 75' lengths of hose	Q-12	20	.800	Ea.	58	40		98	125
2640	100' and 125' lengths of hose	"	20	.800	"	58	40		98	125

21 12 23 – Fire-Suppression Hose Valves

21 12 23.70 Fire Hose Valves

0010	FIRE HOSE VALVES									
0080	Wheel handle, 300 lb., 1-1/2"	1 Spri	12	.667	Ea.	86	37		123	151
0090	2-1/2"	"	7	1.143	"	167	63.50		230.50	279
0100	For polished brass, add					35%				
0110	For polished chrome, add					50%				

21 13 Fire-Suppression Sprinkler Systems

21 13 13 – Wet-Pipe Sprinkler Systems

21 13 13.50 Wet-Pipe Sprinkler System Components

0010	WET-PIPE SPRINKLER SYSTEM COMPONENTS									
2600	Sprinkler heads, nat including supply piping									
3700	Stondord spray, pendent or upright, brass, 135°F to 286°F									
3730	1/2" NPT, 7/16" orifice	1 Spri	16	.500	Ea.	14.35	27.50		41.85	58
3740	1/2" NPT, 1/2" arifice	"	16	.500		9.35	27.50		36.85	52.50
3860	For wax and lead coating, add					33			33	36
3880	For wax coating, add					19.75			19.75	21.50
3900	For lead coating, add				↓	21.50			21.50	23.50
3920	For 360°F, same cost									

21 13 Fire-Suppression Sprinkler Systems

21 13 13 – Wet-Pipe Sprinkler Systems

21 13 13.50 Wet-Pipe Sprinkler System Components		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3930	For 400°F				Eo.	87.50			87.50	96.50
3940	For 500°F				"	87.50			87.50	96.50
4500	Sidewall, horizontal, brass, 135°F to 286°F									
4520	1/2" NPT, 1/2" orifice	1 Spr	16	.500	Eo.	23.50	27.50		51	68
4540	For 360°F, some cost									
4800	Recessed pendent, brass, 135°F to 286°F									
4820	1/2" NPT, 3/8" orifice	1 Spr	10	.800	Eo.	45	44.50		89.50	117
4830	1/2" NPT, 7/16" orifice		10	.800		22	44.50		66.50	91
4840	1/2" NPT, 1/2" orifice		10	.800		18.15	44.50		62.65	87

21 13 16 – Dry-Pipe Sprinkler Systems

21 13 16.50 Dry-Pipe Sprinkler System Components

0010	DRY-PIPE SPRINKLER SYSTEM COMPONENTS									
0600	Accelerator	1 Spr	8	1	Eo.	715	55.50		770.50	870
2600	Sprinkler heads, not including supply piping									
2640	Dry, pendent, 1/2" orifice, 3/4" or 1" NPT									
2700	15-1/4" to 18" length	1 Spr	14	.571	Eo.	137	31.50		168.50	199
2710	18-1/4" to 21" length		13	.615		142	34		176	208
2720	21-1/4" to 24" length		13	.615		147	34		181	214
2730	24-1/4" to 27" length		13	.615		153	34		187	220

21 13 26 – Deluge Fire-Suppression Sprinkler Systems

21 13 26.50 Deluge Fire-Suppression Sprinkler Sys. Comp.

0010	DELUGE FIRE-SUPPRESSION SPRINKLER SYSTEM COMPONENTS									
6200	Valves and components									
7000	Deluge, assembly, incl. trim, pressure									
7020	operated relief, emergency release, gauges									
7040	2" size	Q-12	2	8	Eo.	3,500	400		3,900	4,450
7060	3" size	"	1.50	10.667	"	3,925	530		4,455	5,100

21 13 39 – Foam-Water Systems

21 13 39.50 Foam-Water System Components

0010	FOAM-WATER SYSTEM COMPONENTS									
2600	Sprinkler heads, not including supply piping									
3600	Foam-water, pendent or upright, 1/2" NPT	1 Spr	12	.667	Eo.	198	37		235	273

21 21 Carbon-Dioxide Fire-Extinguishing Systems

21 21 16 – Carbon-Dioxide Fire-Extinguishing Equipment

21 21 16.50 CO2 Fire Extinguishing System

0010	CO ₂ FIRE EXTINGUISHING SYSTEM									
0042	For detectors and control stations, see Section 28 31 23.50									
0100	Control panel, single zone with batteries (2 zones det., 1 suppr.)	1 Elec	1	8	Eo.	1,675	425		2,100	2,500
0150	Multizone (4) with batteries (8 zones det., 4 suppr.)	"	.50	16		3,200	855		4,055	4,775
1000	Dispersion nozzle, CO ₂ , 3" x 5"	1 Plum	18	.444		65	25.50		90.50	110
2000	Extinguisher, CO ₂ system, high pressure, 75 lb. cylinder	Q-1	6	2.667		1,250	138		1,388	1,550
2100	100 lb. cylinder	"	5	3.200		1,275	166		1,441	1,650
3000	Electro/mechanical release	L-1	4	4		163	222		385	515
3400	Manual pull station	1 Plum	6	1.333		58.50	76.50		135	181
4000	Pneumatic damper release	"	8	1		217	57.50		274.50	325

21 22 Clean-Agent Fire-Extinguishing Systems

21 22 16 – Clean-Agent Fire-Extinguishing Equipment

21 22 16.50 FM200 Fire Extinguishing System		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	FM200 FIRE EXTINGUISHING SYSTEM									
1100	Dispersion nozzle FM200, 1-1/2"	1 Plum	14	.571	Ea.	65	33		98	121
2400	Extinguisher, FM200 system, filled, with mounting bracket									
2460	26 lb. container	Q-1	8	2	Ea.	2,225	104		2,329	2,600
2480	44 lb. container		7	2.286		2,975	118		3,093	3,450
2500	63 lb. container		6	2.667		3,475	138		3,613	4,025
2520	101 lb. container		5	3.200		4,650	166		4,816	5,350
2540	196 lb. container	▼	4	4	▼	7,550	207		7,757	8,625
6000	Average FM200 system, minimum				C.F.	1.71			1.71	1.88
6020	Maximum				"	3.40			3.40	3.74

21 31 Centrifugal Fire Pumps

21 31 13 – Electric-Drive, Centrifugal Fire Pumps

21 31 13.50 Electric-Drive Fire Pumps

0010	ELECTRIC-DRIVE FIRE PUMPS Including controller, fittings and relief valve									
3100	250 GPM, 55 psi, 15 HP, 3550 RPM, 2" pump	Q-13	.70	45.714	Ea.	15,200	2,400		17,600	20,500
3200	500 GPM, 50 psi, 27 HP, 1770 RPM, 4" pump		.68	47.059		15,500	2,475		17,975	20,900
3350	750 GPM, 50 psi, 44 HP, 1770 RPM, 5" pump		.64	50		16,200	2,650		18,850	21,800
3400	750 GPM, 100 psi, 66 HP, 3550 RPM, 4" pump	▼	.58	55.172		18,700	2,900		21,600	24,900
5000	For jockey pump 1", 3 HP, with control, odd	Q-12	2	8	▼	2,525	400		2,925	3,375

21 31 16 – Diesel-Drive, Centrifugal Fire Pumps

21 31 16.50 Diesel-Drive Fire Pumps

0010	DIESEL-DRIVE FIRE PUMPS Including controller, fittings and relief valve									
0050	500 GPM, 50 psi, 27 HP, 4" pump	Q-13	.64	50	Ea.	35,300	2,650		37,950	42,800
0200	750 GPM, 50 psi, 44 HP, 5" pump		.60	53.333		36,300	2,825		39,125	44,200
0400	1000 GPM, 100 psi, 89 HP, 4" pump		.56	57.143		39,800	3,025		42,825	48,300
0700	2000 GPM, 100 psi, 167 HP, 6" pump	▼	.34	94.118		50,500	4,975		55,475	63,000
0950	3500 GPM, 100 psi, 300 HP, 10" pump	▼	.24	133	▼	70,500	7,025		77,525	88,000

Division Notes

[illegible]

Estimating Tips

22 10 00 Plumbing Piping and Pumps

This subdivision is primarily basic pipe and related materials. The pipe may be used by any of the mechanical disciplines, i.e., plumbing, fire protection, heating, and air conditioning.

Note: CPVC plastic piping approved for fire protection is located in 21 11 13.

- The labor adjustment factors listed in Subdivision 22 01 02.20 apply throughout Divisions 21, 22, and 23. CAUTION: the correct percentage may vary for the same items. For example, the percentage add for the basic pipe installation should be based on the maximum height that the craftsman must install for that particular section. If the pipe is to be located 14' above the floor but it is suspended on threaded rod from beams, the bottom flange of which is 18' high (4' rods), then the height is actually 18' and the add is 20%. The pipe coverer, however, does not have to go above the 14', and so his or her add should be 10%.
- Most pipe is priced first as straight pipe with a joint (coupling, weld, etc.) every 10' and a hanger usually every 10'.

There are exceptions with hanger spacing such as for cast iron pipe (5') and plastic pipe (3 per 10'). Following each type of pipe there are several lines listing sizes and the amount to be subtracted to delete couplings and hangers. This is for pipe that is to be buried or supported together on trapeze hangers. The reason that the couplings are deleted is that these runs are usually long, and frequently longer lengths of pipe are used. By deleting the couplings, the estimator is expected to look up and add back the correct reduced number of couplings.

- When preparing an estimate, it may be necessary to approximate the fittings. Fittings usually run between 25% and 50% of the cost of the pipe. The lower percentage is for simpler runs, and the higher number is for complex areas, such as mechanical rooms.
- For historic restoration projects, the systems must be as invisible as possible, and pathways must be sought for pipes, conduit, and ductwork. While installations in accessible spaces (such as basements and attics) are relatively straightforward to estimate, labor costs may be more difficult to determine when delivery systems must be concealed.

22 40 00 Plumbing Fixtures

- Plumbing fixture costs usually require two lines: the fixture itself and its "rough-in, supply, and waste."
- In the Assemblies Section (Plumbing D2010) for the desired fixture, the System Components Group at the center of the page shows the fixture on the first line. The rest of the list (fittings, pipe, tubing, etc.) will total up to what we refer to in the Unit Price section as "Rough-in, supply, waste, and vent." Note that for most fixtures we allow a nominal 5' of tubing to reach from the fixture to a main or riser.
- Remember that gas- and oil-fired units need venting.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 22.

22 01 Operation and Maintenance of Plumbing

22 01 02 – Labor Adjustments

		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
22 01 02.10 Boilers, General							Labor	Equipment		
0010	BOILERS, GENERAL , Prices do not include flue piping, elec. wiring,									
0020	gas or oil piping, boiler base, pad, or tankless unless noted									
0100	Boiler H.P.: 10 KW = 34 lb./steam/hr. = 33,475 BTU/hr.					R235000-50				
0150	To convert SFR to BTU rating: Hot water, 150 x SFR;									
0160	Forced hot water, 180 x SFR; steam, 240 x SFR									
22 01 02.20 Labor Adjustment Factors										
0010	LABOR ADJUSTMENT FACTORS , (For Div. 21, 22 and 23)					R220102-20				
0100	Labor factors, The below are reasonable suggestions, however									
0110	each project must be evaluated for its own peculiarities, and									
0120	the adjustments be increased or decreased depending on the									
0130	severity of the special conditions.									
1000	Add to labor for elevated installation (Above floor level)									
1080	10' to 14.5' high						10%			
1100	15' to 19.5' high						20%			
1120	20' to 24.5' high						25%			
1140	25' to 29.5' high						35%			
1160	30' to 34.5' high						40%			
1180	35' to 39.5' high						50%			
1200	40' and higher						55%			
2000	Add to labor for crawl space									
2100	3' high						40%			
2140	4' high						30%			
3000	Add to labor for multi-story building									
3100	Add per floor for floors 3 thru 19						2%			
3140	Add per floor for floors 20 and up						4%			
4000	Add to labor for working in existing occupied buildings									
4100	Hospital						35%			
4140	Office building						25%			
4180	School						20%			
4220	Factory or warehouse						15%			
4260	Multi dwelling						15%			
5000	Add to labor, miscellaneous									
5100	Crowded shaft						35%			
5140	Congested area						15%			
5180	Excessive heat or cold						30%			
9000	Labor factors, The above are reasonable suggestions, however									
9010	each project should be evaluated for its own peculiarities.									
9100	Other factors to be considered are:									
9140	Movement of material and equipment through finished areas									
9180	Equipment room									
9220	Attic space									
9260	No service road									
9300	Poor unloading/storage area									
9340	Congested site area/heavy traffic									

22 05 Common Work Results for Plumbing

22 05 05 – Selective Plumbing Demolition

22 05 05.10 Plumbing Demolition		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	PLUMBING DEMOLITION									
1020	Fixtures, including 10' piping									
1100	Bathtubs, cast iron	1 Plum	4	2	Ea.		115		115	174
1120	Fiberglass		6	1.333			76.50		76.50	116
1140	Steel		5	1.600			92		92	139
1200	Lavatory, wall hung		10	.800			46		46	69.50
1220	Counter top		8	1			57.50		57.50	87
1300	Sink, single compartment		8	1			57.50		57.50	87
1320	Double compartment		7	1.143			66		66	99.50
1400	Water closet, floor mounted		8	1			57.50		57.50	87
1420	Wall mounted		7	1.143			66		66	99.50
1500	Urinal, floor mounted		4	2			115		115	174
1520	Wall mounted		7	1.143			66		66	99.50
1600	Water fountains, free standing		8	1			57.50		57.50	87
1620	Wall or deck mounted		6	1.333	↓		76.50		76.50	116
2000	Piping, metal, up thru 1-1/2" diameter		200	.040	L.F.		2.30		2.30	3.48
2050	2" thru 3-1/2" diameter		150	.053			3.07		3.07	4.63
2100	4" thru 6" diameter	2 Plum	100	.160			9.20		9.20	13.90
2150	8" thru 14" diameter	"	60	.267			15.35		15.35	23
2153	16" thru 20" diameter	Q-18	70	.343			18.70	.79	19.49	29.50
2155	24" thru 26" diameter		55	.436			24	1	25	37
2156	30" thru 36" diameter	↓	40	.600			33	1.38	34.38	51
2160	Plastic pipe with fittings, up thru 1-1/2" diameter	1 Plum	250	.032			1.84		1.84	2.78
2162	2" thru 3" diameter	"	200	.040			2.30		2.30	3.48
2164	4" thru 6" diameter	Q-1	200	.080			4.14		4.14	6.25
2166	8" thru 14" diameter		150	.107			5.55		5.55	8.35
2168	16" diameter		100	.160	↓		8.30		8.30	12.50
2212	Deduct for salvage, aluminum scrap				Ton				700	770
2214	Brass scrap								2,450	2,675
2216	Copper scrap								3,200	3,525
2218	Lead scrap								520	570
2220	Steel scrap				↓				180	200
2250	Water heater, 40 gal.	1 Plum	6	1.333	Ea.		76.50		76.50	116
9470	Water softener	Q-1	2	8	"		415		415	625

22 05 23 – General-Duty Valves for Plumbing Piping

22 05 23.10 Valves, Brass

0010	VALVES, BRASS									
0500	Gas cocks, threaded									
0530	1/2"	1 Plum	24	.333	Ea.	13.15	19.20		32.35	43.50
0540	3/4"		22	.364		15.50	21		36.50	48.50
0550	1"		19	.421		31	24		55	70.50
0560	1-1/4"	↓	15	.533	↓	44.50	30.50		75	95.50

22 05 23.20 Valves, Bronze

0010	VALVES, BRONZE									
1020	Angle, 150 lb., rising stem, threaded									
1030	1/8"	1 Plum	24	.333	Ea.	135	19.20		154.20	177
1040	1/4"		24	.333		135	19.20		154.20	177
1050	3/8"		24	.333		135	19.20		154.20	177
1060	1/2"		22	.364		135	21		156	180
1070	3/4"		20	.400		184	23		207	237
1080	1"		19	.421		265	24		289	330
1100	1-1/2"		13	.615		445	35.50		480.50	545

22 05 Common Work Results for Plumbing

22 05 23 – General-Duty Valves for Plumbing Piping

22 05 23.20 Valves, Bronze		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1110	.2"	1 Plum	11	.727	Ea.	715	42		757	850
1300	Ball									
1398	Threaded, 150 psi									
1400	1/4"	1 Plum	24	.333	Ea.	13.55	19.20		32.75	44
1430	3/8"		24	.333		13.55	19.20		32.75	44
1450	1/2"		22	.364		13.55	21		34.55	46.50
1460	3/4"		20	.400		22.50	23		45.50	59.50
1470	1"		19	.421		32	24		56	71.50
1480	1-1/4"		15	.533		56	30.50		86.50	108
1490	1-1/2"		13	.615		69.50	35.50		105	130
1500	2"		11	.727		88	42		130	160
1750	Check, swing, class 150, regrinding disc, threaded									
1800	1/8"	1 Plum	24	.333	Ea.	63	19.20		82.20	98.50
1830	1/4"		24	.333		63	19.20		82.20	98.50
1840	3/8"		24	.333		67	19.20		86.20	103
1850	1/2"		24	.333		72	19.20		91.20	108
1860	3/4"		20	.400		95	23		118	139
1870	1"		19	.421		137	24		161	187
1880	1-1/4"		15	.533		198	30.50		228.50	265
1890	1-1/2"		13	.615		230	35.50		265.50	305
1900	2"		11	.727		340	42		382	435
1910	2-1/2"	Q-1	15	1.067		760	55.50		815.50	920
2000	Far 200 lb., add					5%	10%			
2040	Far 300 lb., add					15%	15%			
2850	Gate, N.R.S., saldered, 125 psi									
2900	3/8"	1 Plum	24	.333	Ea.	54.50	19.20		73.70	89
2920	1/2"		24	.333		46.50	19.20		65.70	80.50
2940	3/4"		20	.400		53	23		76	93
2950	1"		19	.421		75	24		99	119
2960	1-1/4"		15	.533		115	30.50		145.50	173
2970	1-1/2"		13	.615		129	35.50		164.50	196
2980	2"		11	.727		182	42		224	264
2990	2-1/2"	Q-1	15	1.067		455	55.50		510.50	590
3000	3"	"	13	1.231		595	64		659	750
3850	Rising stem, saldered, 300 psi									
3950	1"	1 Plum	19	.421	Ea.	189	24		213	245
3980	2"	"	11	.727		505	42		547	625
4000	3"	Q-1	13	1.231		1,675	64		1,739	1,950
4250	Threaded, class 150									
4310	1/4"	1 Plum	24	.333	Ea.	71	19.20		90.20	108
4320	3/8"		24	.333		71	19.20		90.20	108
4330	1/2"		24	.333		65	19.20		84.20	101
4340	3/4"		20	.400		76	23		99	119
4350	1"		19	.421		102	24		126	149
4360	1-1/4"		15	.533		139	30.50		169.50	200
4370	1-1/2"		13	.615		175	35.50		210.50	246
4380	2"		11	.727		235	42		277	320
4390	2-1/2"	Q-1	15	1.067		550	55.50		605.50	690
4400	3"	"	13	1.231		765	64		829	935
4500	Far 300 psi, threaded, add					100%	15%			
4540	Far chain operated type, add					15%				
4850	Globe, class 150, rising stem, threaded									
4920	1/4"	1 Plum	24	.333	Ea.	102	19.20		121.20	141

22 05 Common Work Results for Plumbing

22 05 23 – General-Duty Valves for Plumbing Piping

22 05 23.20 Valves, Bronze		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4940	3/8" size	1 Plum	24	.333	Ea.	101	19.20		120.20	140
4950	1/2"		24	.333		101	19.20		120.20	140
4960	3/4"		20	.400		135	23		158	183
4970	1"		19	.421		212	24		236	270
4980	1-1/4"		15	.533		335	30.50		365.50	415
4990	1-1/2"		13	.615		410	35.50		445.50	505
5000	2"	▼	11	.727	▼	615	42		657	740
5010	2-1/2"	Q-1	15	1.067	▼	1,225	55.50		1,280.50	1,425
5020	3"	"	13	1.231	▼	1,750	64		1,814	2,025
5120	For 300 lb. threaded, add					50%	15%			
5600	Relief, pressure & temperature, self-closing, ASME, threaded									
5640	3/4"	1 Plum	28	.286	Ea.	253	16.45		269.45	305
5650	1"		24	.333		405	19.20		424.20	475
5660	1-1/4"		20	.400		895	23		918	1,025
5670	1-1/2"		18	.444		1,250	25.50		1,275.50	1,425
5680	2"	▼	16	.500	▼	1,350	29		1,379	1,550
5950	Pressure, papet type, threaded									
6000	1/2"	1 Plum	30	.267	Ea.	68.50	15.35		83.85	98.50
6040	3/4"	"	28	.286	"	73.50	16.45		89.95	106
6400	Pressure, water, ASME, threaded									
6440	3/4"	1 Plum	28	.286	Ea.	116	16.45		132.45	152
6450	1"		24	.333		260	19.20		279.20	315
6460	1-1/4"		20	.400		390	23		413	465
6470	1-1/2"		18	.444		570	25.50		595.50	665
6480	2"		16	.500		820	29		849	950
6490	2-1/2"	▼	15	.533	▼	3,150	30.50		3,180.50	3,525
6900	Reducing, water pressure									
6920	300 psi to 25-75 psi, threaded or sweat									
6940	1/2"	1 Plum	24	.333	Ea.	395	19.20		414.20	465
6950	3/4"		20	.400		395	23		418	470
6960	1"		19	.421		615	24		639	710
6970	1-1/4"		15	.533		1,100	30.50		1,130.50	1,250
6980	1-1/2"	▼	13	.615	▼	1,650	35.50		1,685.50	1,875
8350	Tempering, water, sweat connections									
8400	1/2"	1 Plum	24	.333	Ea.	109	19.20		128.20	149
8440	3/4"	"	20	.400	"	126	23		149	174
8650	Threaded connections									
8700	1/2"	1 Plum	24	.333	Ea.	126	19.20		145.20	168
8740	3/4"		20	.400		770	23		793	880
8750	1"		19	.421		865	24		889	990
8760	1-1/4"		15	.533		1,350	30.50		1,380.50	1,525
8770	1-1/2"		13	.615		1,475	35.50		1,510.50	1,650
8780	2"	▼	11	.727	▼	2,200	42		2,242	2,500

22 05 23.60 Valves, Plastic

0010	VALVES, PLASTIC									
1100	Angle, PVC, threaded									
1110	1/4"	1 Plum	26	.308	Ea.	74	17.70		91.70	108
1120	1/2"		26	.308		74	17.70		91.70	108
1130	3/4"		25	.320		87.50	18.40		105.90	125
1140	1"	▼	23	.348	▼	106	20		126	147
1150	Ball, PVC, sacket or threaded, single union									
1230	1/2"	1 Plum	26	.308	Ea.	28	17.70		45.70	57.50

22 05 Common Work Results for Plumbing

22 05 23 – General-Duty Valves for Plumbing Piping

22 05 23.60 Valves, Plastic		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1240	3/4"	1 Plum	25	.320	Eo.	32	18.40		50.40	63.50
1250	1"		23	.348		40	20		60	74.50
1260	1-1/4"		21	.381		54	22		76	92.50
1270	1-1/2"		20	.400		64.50	23		87.50	106
1280	2"	↓	17	.471		93.50	27		120.50	144
1360	For PVC, flanged, odd				↓	100%	15%			
1650	CPVC, socket or threaded, single union									
1700	1/2"	1 Plum	26	.308	Eo.	56	17.70		73.70	88
1720	3/4"		25	.320		70	18.40		88.40	105
1730	1"		23	.348		84	20		104	123
1750	1-1/4"		21	.381		134	22		156	181
1760	1-1/2"		20	.400		134	23		157	183
1840	For CPVC, flanged, odd					65%	15%			
1880	For true union, socket or threaded, odd				↓	50%	5%			
2050	Polypropylene, threaded									
2100	1/4"	1 Plum	26	.308	Eo.	45	17.70		62.70	76
2120	3/8"		26	.308		45	17.70		62.70	76
2130	1/2"		26	.308		45	17.70		62.70	76
2140	3/4"		25	.320		54.50	18.40		72.90	88
2150	1"		23	.348		62.50	20		82.50	98.50
2160	1-1/4"		21	.381		84	22		106	126
2170	1-1/2"		20	.400		103	23		126	149
2180	2"	↓	17	.471	↓	138	27		165	193
4850	Foot valve, PVC, socket or threaded									
4900	1/2"	1 Plum	34	.235	Eo.	73	13.55		86.55	101
4930	3/4"		32	.250		83	14.40		97.40	113
4940	1"		28	.286		107	16.45		123.45	143
4950	1-1/4"		27	.296		206	17.05		223.05	253
4960	1-1/2"	↓	26	.308	↓	206	17.70		223.70	254
6350	Y sediment strainer, PVC, socket or threaded									
6400	1/2"	1 Plum	26	.308	Eo.	55	17.70		72.70	87
6440	3/4"		24	.333		58.50	19.20		77.70	93
6450	1"		23	.348		69.50	20		89.50	107
6460	1-1/4"		21	.381		117	22		139	161
6470	1-1/2"		20	.400		117	23		140	163

22 05 48 – Vibration and Seismic Controls for Plumbing Piping and Equipment

22 05 48.10 Seismic Bracing Supports

SEISMIC BRACING SUPPORTS										
0010	Clomps									
0020	C-clomp, for mounting on steel beam									
0040	3/8" threaded rod	1 Skwk	160	.050	Eo.	1.95	2.37		4.32	5.80
0050	1/2" threaded rod		160	.050		2.09	2.37		4.46	5.95
0060	5/8" threaded rod		160	.050		3.52	2.37		5.89	7.55
0070	3/4" threaded rod	↓	160	.050	↓	4.34	2.37		6.71	8.45
0100	Brockets									
0110	Beam side or wall malleable iron									
0120	3/8" threaded rod	1 Skwk	48	.167	Eo.	2.96	7.90		10.86	15.45
0130	1/2" threaded rod		48	.167		4.18	7.90		12.08	16.80
0140	5/8" threaded rod		48	.167		7.85	7.90		15.75	21
0150	3/4" threaded rod		48	.167		10.75	7.90		18.65	24
0160	7/8" threaded rod	↓	48	.167	↓	11.10	7.90		19	24.50
0170	For concrete installation, odd						30%			

22 05 Common Work Results for Plumbing

22 05 48 – Vibration and Seismic Controls for Plumbing Piping and Equipment

22 05 48.10 Seismic Bracing Supports		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0180	Wall, welded steel									
0190	0 size 12" wide 18" deep	1 Skwk	34	.235	Ea.	164	11.15		175.15	197
0200	1 size 18" wide 24" deep		34	.235		201	11.15		212.15	238
0210	2 size 24" wide 30" deep		34	.235		276	11.15		287.15	320
0300	Rad, carbon steel									
0310	Continuous thread									
0320	1/4" thread	1 Skwk	144	.056	L.F.	1.62	2.63		4.25	5.85
0330	3/8" thread		144	.056		1.72	2.63		4.35	5.95
0340	1/2" thread		144	.056		2.72	2.63		5.35	7.05
0350	5/8" thread		144	.056		3.86	2.63		6.49	8.30
0360	3/4" thread		144	.056		6.80	2.63		9.43	11.55
0370	7/8" thread		144	.056		8.55	2.63		11.18	13.45
0380	For galvanized, add					30%				
0400	Channel, steel									
0410	3/4" x 1-1/2"	1 Skwk	80	.100	L.F.	4.83	4.73		9.56	12.65
0420	1-1/2" x 1-1/2"		70	.114		6.35	5.40		11.75	15.35
0430	1-7/8" x 1-1/2"		60	.133		22.50	6.30		28.80	34.50
0440	3" x 1-1/2"		50	.160		38	7.55		45.55	53
0450	Spring nuts									
0460	3/8"	1 Skwk	100	.080	Ea.	1.40	3.78		5.18	7.40
0470	1/2"	"	80	.100	"	1.67	4.73		6.40	9.20
0500	Welding, field									
0510	Cleaning and welding plates, bars, or rods									
0520	To existing beams, columns, or trusses									
0530	1" weld	1 Skwk	144	.056	Ea.	.22	2.63		2.85	4.31
0540	2" weld		72	.111		.38	5.25		5.63	8.55
0550	3" weld		54	.148		.59	7		7.59	11.50
0560	4" weld		36	.222		.81	10.50		11.31	17.20
0570	5" weld		30	.267		1.02	12.60		13.62	20.50
0580	6" weld	▼	24	.333	▼	1.15	15.75		16.90	26
0600	Vibration absorbers									
0610	Hangers, neoprene flex									
0620	10-120 lb. capacity	1 Skwk	8	1	Ea.	25.50	47.50		73	102
0630	75-550 lb. capacity		8	1		36	47.50		83.50	113
0640	250-1100 lb. capacity		6	1.333		66.50	63		129.50	171
0650	1000-4000 lb. capacity		6	1.333		124	63		187	235
0660	Spring flex									
0670	60-450 lb. capacity	1 Skwk	8	1	Ea.	69	47.50		116.50	150
0680	85-450 lb. capacity		8	1		95.50	47.50		143	179
0690	600-900 lb. capacity		8	1		105	47.50		152.50	190
0700	1100-1300 lb. capacity	▼	6	1.333	▼	108	63		171	217
0710	Mounts, neoprene									
0720	135-380 lb. capacity	1 Skwk	7	1.143	Ea.	16.70	54		70.70	102
0730	250-1100 lb. capacity		7	1.143		47.50	54		101.50	136
0740	1000-4000 lb. capacity		5	1.600		107	75.50		182.50	234

22 05 76 – Facility Drainage Piping Cleanouts

22 05 76.10 Cleanouts

0010	CLEANOUTS									
0060	Floor type									
0080	Round or square, scariated nickel branze tap									
0100	2" pipe size	1 Plum	10	.800	Ea.	183	46		229	271
0120	3" pipe size	▼	8	1	▼	274	57.50		331.50	385

22 05 Common Work Results for Plumbing

22 05 76 – Facility Drainage Piping Cleanouts

22 05 76.10 Cleanouts		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0140	4" pipe size	1 Plum	6	1.333	Eo.	274	76.50		350.50	415
0980	Round top, recessed for terrozzo									
1000	2" pipe size	1 Plum	9	.889	Eo.	183	51		234	278
1080	3" pipe size		6	1.333		274	76.50		350.50	415
1100	4" pipe size		4	2		274	115		389	475
1120	5" pipe size	Q-1	6	2.667		345	138		483	590
22 05 76.20 Cleanout Tees										
0010	CLEANOUT TEES									
0100	Cast iron, B&S, with countersunk plug									
0200	2" pipe size	1 Plum	4	2	Ea.	248	115		363	445
0220	3" pipe size		3.60	2.222		270	128		398	490
0240	4" pipe size		3.30	2.424		335	140		475	580
0280	6" pipe size	Q-1	5	3.200		910	166		1,076	1,250
0500	For round smooth access cover, some price									
4000	Plastic, tees and adapters. Add plugs									
4010	ABS, DWV									
4020	Cleanout tee, 1-1/2" pipe size	1 Plum	15	.533	Eo.	20	30.50		50.50	68.50
4030	2" pipe size	Q-1	27	.593		22.50	30.50		53	71.50
4040	3" pipe size		21	.762		43.50	39.50		83	108
4050	4" pipe size		16	1		87	52		139	174
4100	Cleanout plug, 1-1/2" pipe size	1 Plum	32	.250		2.97	14.40		17.37	25
4110	2" pipe size	Q-1	56	.286		3.90	14.80		18.70	27
4120	3" pipe size		36	.444		6.30	23		29.30	42
4130	4" pipe size		30	.533		11	27.50		38.50	53.50
4180	Cleanout adapter fitting, 1-1/2" pipe size	1 Plum	32	.250		4.70	14.40		19.10	26.50
4190	2" pipe size	Q-1	56	.286		7.20	14.80		22	30.50
4200	3" pipe size		36	.444		18.45	23		41.45	55.50
4210	4" pipe size		30	.533		34	27.50		61.50	79
5000	PVC, DWV									
5010	Cleanout tee, 1-1/2" pipe size	1 Plum	15	.533	Eo.	12.75	30.50		43.25	60.50
5020	2" pipe size	Q-1	27	.593		14.85	30.50		45.35	63
5030	3" pipe size		21	.762		29	39.50		68.50	91
5040	4" pipe size		16	1		51.50	52		103.50	135
5090	Cleanout plug, 1-1/2" pipe size	1 Plum	32	.250		3.04	14.40		17.44	25
5100	2" pipe size	Q-1	56	.286		3.30	14.80		18.10	26
5110	3" pipe size		36	.444		6.05	23		29.05	41.50
5120	4" pipe size		30	.533		8.90	27.50		36.40	51.50
5130	6" pipe size		24	.667		29.50	34.50		64	84.50
5170	Cleanout adapter fitting, 1-1/2" pipe size	1 Plum	32	.250		4.06	14.40		18.46	26
5180	2" pipe size	Q-1	56	.286		5.20	14.80		20	28.50
5190	3" pipe size		36	.444		14.70	23		37.70	51
5200	4" pipe size		30	.533		23.50	27.50		51	67.50
5210	6" pipe size		24	.667		70.50	34.50		105	130

22 07 Plumbing Insulation

22 07 19 – Plumbing Piping Insulation

22 07 19.10 Piping Insulation

			Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	PIPING INSULATION										
0100	Rule of thumb, as a percentage of total mechanical costs					Job				10%	10%
0110	Insulation req'd. is based on the surface size/area to be covered										
0600	Pipe covering (price copper tube one size less than IPS)										
6600	Fiberglass, with oil service jacket										
6840	1" wall, 1/2" iron pipe size	G	Q-14	240	.067	L.F.	.89	3.07		3.96	5.75
6870	1" iron pipe size	G		220	.073		1.04	3.35		4.39	6.35
6900	2" iron pipe size	G		200	.080		1.32	3.68		5	7.20
6920	3" iron pipe size	G		180	.089		1.60	4.09		5.69	8.10
6940	4" iron pipe size	G		150	.107		2.12	4.91		7.03	10
7320	2" wall, 1/2" iron pipe size	G		220	.073		2.62	3.35		5.97	8.10
7440	6" iron pipe size	G		100	.160		5.25	7.35		12.60	17.25
7460	8" iron pipe size	G		80	.200		6.40	9.20		15.60	21.50
7480	10" iron pipe size	G		70	.229		7.65	10.50		18.15	25
7490	12" iron pipe size	G		65	.246		8.55	11.35		19.90	27
7800	For fiberglass with standard convos jacket, deduct						5%				
7802	For fittings, add 3 L.F. for each fitting										
7804	plus 4 L.F. for each flange of the fitting										
7810	Finishes										
7812	For .016" aluminum jacket, add	G	Q-14	200	.080	S.F.	.92	3.68		4.60	6.75
7813	For .010" stainless steel, add	G	"	160	.100	"	2.88	4.60		7.48	10.30
7814	For single layer of felt, add						10%	10%			
7816	For roofing paper, 45 lb. to 55 lb., add						25%	10%			
7879	Rubber tubing, flexible closed cell foam										
7880	3/8" wall, 1/4" iron pipe size	G	1 Asbe	120	.067	L.F.	.33	3.41		3.74	5.65
7910	1/2" iron pipe size	G		115	.070		.41	3.56		3.97	6
7920	3/4" iron pipe size	G		115	.070		.46	3.56		4.02	6.05
7930	1" iron pipe size	G		110	.073		.52	3.72		4.24	6.35
7950	1-1/2" iron pipe size	G		110	.073		.73	3.72		4.45	6.60
8100	1/2" wall, 1/4" iron pipe size	G		90	.089		.54	4.55		5.09	7.70
8130	1/2" iron pipe size	G		89	.090		.67	4.60		5.27	7.90
8140	3/4" iron pipe size	G		89	.090		.75	4.60		5.35	8
8150	1" iron pipe size	G		88	.091		.82	4.65		5.47	8.15
8170	1-1/2" iron pipe size	G		87	.092		1.15	4.70		5.85	8.55
8180	2" iron pipe size	G		86	.093		1.47	4.76		6.23	9
8200	3" iron pipe size	G		85	.094		2.06	4.81		6.87	9.75
8300	3/4" wall, 1/4" iron pipe size	G		90	.089		.85	4.55		5.40	8.05
8330	1/2" iron pipe size	G		89	.090		1.10	4.60		5.70	8.35
8340	3/4" iron pipe size	G		89	.090		1.35	4.60		5.95	8.65
8350	1" iron pipe size	G		88	.091		1.54	4.65		6.19	8.95
8370	1-1/2" iron pipe size	G		87	.092		2.32	4.70		7.02	9.85
8380	2" iron pipe size	G		86	.093		2.68	4.76		7.44	10.35
8400	3" iron pipe size	G		85	.094		4.08	4.81		8.89	12
8444	1" wall, 1/2" iron pipe size	G		86	.093		2.05	4.76		6.81	9.65
8445	3/4" iron pipe size	G		84	.095		2.48	4.87		7.35	10.35
8446	1" iron pipe size	G		84	.095		2.89	4.87		7.76	10.80
8447	1-1/4" iron pipe size	G		82	.098		3.23	4.99		8.22	11.30
8448	1-1/2" iron pipe size	G		82	.098		3.76	4.99		8.75	11.90
8449	2" iron pipe size	G		80	.100		4.95	5.10		10.05	13.40
8450	2-1/2" iron pipe size	G		80	.100		6.45	5.10		11.55	15.05
8456	Rubber insulation tape, 1/8" x 2" x 30'	G				Eq.	12.05			12.05	13.25

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.14 Pipe, Brass

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	PIPE, BRASS, Plain end									
0900	Field threaded, coupling & clevis hanger assembly 10' O.C.									
0920	Regular weight									
1120	1/2" diameter	1 Plum	48	.167	L.F.	6.40	9.60		16	21.50
1140	3/4" diameter		46	.174		8.60	10		18.60	24.50
1160	1" diameter	▼	43	.186		12.50	10.70		23.20	30
1180	1-1/4" diameter	Q-1	72	.222		19.10	11.50		30.60	38.50
1200	1-1/2" diameter		65	.246		23	12.75		35.75	44.50
1220	2" diameter		53	.302		32	15.65		47.65	59

22 11 13.23 Pipe/Tube, Copper

0010	PIPE/TUBE, COPPER, Solder joints									
1000	Type K tubing, couplings & clevis hanger assemblies 10' O.C.									
1100	1/4" diameter	1 Plum	84	.095	L.F.	4.62	5.50		10.12	13.40
1200	1" diameter		66	.121		10.60	7		17.60	22
1260	2" diameter	▼	40	.200	▼	26.50	11.50		38	46.50
2000	Type L tubing, couplings & clevis hanger assemblies 10' O.C.									
2100	1/4" diameter	1 Plum	88	.091	L.F.	2.30	5.25		7.55	10.45
2120	3/8" diameter		84	.095		3.13	5.50		8.63	11.75
2140	1/2" diameter		81	.099		3.37	5.70		9.07	12.30
2160	5/8" diameter		79	.101		5.35	5.85		11.20	14.65
2180	3/4" diameter		76	.105		5.15	6.05		11.20	14.80
2200	1" diameter		68	.118		7.85	6.75		14.60	18.85
2220	1-1/4" diameter		58	.138		11.25	7.95		19.20	24.50
2240	1-1/2" diameter		52	.154		14.35	8.85		23.20	29
2260	2" diameter	▼	42	.190		22	10.95		32.95	40.50
2280	2-1/2" diameter	Q-1	62	.258		35.50	13.35		48.85	59
2300	3" diameter		56	.286		48.50	14.80		63.30	76
2320	3-1/2" diameter		43	.372		70.50	19.25		89.75	107
2340	4" diameter		39	.410		85.50	21.50		107	126
2360	5" diameter		34	.471		168	24.50		192.50	222
2380	6" diameter	Q-2	40	.600		244	32		276	315
2400	8" diameter	"	36	.667		370	36		406	465
2410	For other than full hard temper, add				▼	21%				
2590	For silver solder, add						15%			
4000	Type DWV tubing, couplings & clevis hanger assemblies 10' O.C.									
4100	1-1/4" diameter	1 Plum	60	.133	L.F.	9.95	7.65		17.60	22.50
4120	1-1/2" diameter		54	.148		12.45	8.55		21	26.50
4140	2" diameter		44	.182		17.05	10.45		27.50	34.50
4160	3" diameter	Q-1	58	.276		35	14.30		49.30	60
4180	4" diameter		40	.400		62	20.50		82.50	99.50
4200	5" diameter	▼	36	.444		154	23		177	205
4220	6" diameter	Q-2	42	.571	▼	230	30.50		260.50	300

22 11 13.44 Pipe, Steel

0010	PIPE, STEEL									
0012	The steel pipe in this section does not include fittings such as ells, tees									
0014	For fittings either add a % (usually 25 to 35%) or see									
0015	the Mechanical or Plumbing Cost Data									
0020	All pipe sizes are to Spec. A-53 unless noted otherwise									
0050	Schedule 40, threaded, with couplings, and clevis hanger									
0060	assemblies sized for covering, 10' O.C.									
0540	Block, 1/4" diameter	1 Plum	66	.121	L.F.	4.51	7		11.51	15.50
0550	3/8" diameter		65	.123		5.10	7.10		12.20	16.30

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.44 Pipe, Steel		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0560	1/2" diameter	1 Plum	63	.127	L.F.	2.73	7.30		10.03	14.05
0570	3/4" diameter		61	.131		3.17	7.55		10.72	14.90
0580	1" diameter		53	.151		4.64	8.70		13.34	18.20
0590	1-1/4" diameter	Q-1	89	.180		5.75	9.30		15.05	20.50
0600	1-1/2" diameter		80	.200		6.70	10.35		17.05	23
0610	2" diameter		64	.250		8.95	12.95		21.90	29.50
0620	2-1/2" diameter		50	.320		14.05	16.60		30.65	40.50
0630	3" diameter		43	.372		18	19.25		37.25	49
0640	3-1/2" diameter		40	.400		24.50	20.50		45	58.50
0650	4" diameter		36	.444		27	23		50	65
1280	All pipe sizes are to Spec. A-53 unless noted otherwise									
1281	Schedule 40, threaded, with couplings and clevis hanger									
1282	assemblies sized for covering, 10' O. C.									
1290	Galvanized, 1/4" diameter	1 Plum	66	.121	L.F.	6.40	7		13.40	17.60
1300	3/8" diameter		65	.123		7.05	7.10		14.15	18.45
1310	1/2" diameter		63	.127		3.76	7.30		11.06	15.20
1320	3/4" diameter		61	.131		4.45	7.55		12	16.30
1330	1" diameter		53	.151		6.10	8.70		14.80	19.80
1340	1-1/4" diameter	Q-1	89	.180		7.70	9.30		17	22.50
1350	1-1/2" diameter		80	.200		9.05	10.35		19.40	25.50
1360	2" diameter		64	.250		12.15	12.95		25.10	33
1370	2-1/2" diameter		50	.320		20	16.60		36.60	47
1380	3" diameter		43	.372		25.50	19.25		44.75	57.50
1390	3-1/2" diameter		40	.400		33	20.50		53.50	68
1400	4" diameter		36	.444		38	23		61	76.50
2000	Welded, sch. 40, on yoke & roll hanger assy's, sized for covering, 10' O.C.									
2040	Black, 1" diameter	Q-15	93	.172	L.F.	3.91	8.90	.60	13.41	18.40
2070	2" diameter		61	.262		7.05	13.60	.91	21.56	29.50
2090	3" diameter		43	.372		15.40	19.25	1.29	35.94	47.50
2110	4" diameter		37	.432		21.50	22.50	1.50	45.50	59
2120	5" diameter		32	.500		34	26	1.73	61.73	78.50
2130	6" diameter	Q-16	36	.667		42.50	36	1.53	80.03	102
2140	8" diameter		29	.828		68	44.50	1.90	114.40	144
2150	10" diameter		24	1		88.50	53.50	2.30	144.30	181
2160	12" diameter		19	1.263		104	68	2.91	174.91	219

22 11 13.48 Pipe, Fittings and Valves, Steel, Grooved-Joint

0010	PIPE, FITTINGS AND VALVES, STEEL, GROOVED-JOINT									
0012	Fittings are ductile iron. Steel fittings noted.									
0020	Pipe includes coupling & clevis type hanger assemblies, 10' O.C.									
1000	Schedule 40, black									
1040	3/4" diameter	1 Plum	71	.113	L.F.	4.62	6.50		11.12	14.90
1050	1" diameter		63	.127		4.41	7.30		11.71	15.90
1060	1-1/4" diameter		58	.138		5.70	7.95		13.65	18.25
1070	1-1/2" diameter		51	.157		6.50	9.05		15.55	21
1080	2" diameter		40	.200		7.85	11.50		19.35	26
1090	2-1/2" diameter	Q-1	57	.281		13.45	14.55		28	37
1100	3" diameter		50	.320		16.55	16.60		33.15	43
1110	4" diameter		45	.356		22.50	18.40		40.90	53
1120	5" diameter		37	.432		36.50	22.50		59	74.50
1130	6" diameter	Q-2	42	.571		47	30.50		77.50	98.50
1800	Galvanized									
1840	3/4" diameter	1 Plum	71	.113	L.F.	5.85	6.50		12.35	16.25

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.48 Pipe, Fittings and Valves, Steel, Grooved-Joint		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1850	1" diameter	1 Plum	63	.127	L.F.	5.55	7.30		12.85	17.15
1860	1-1/4" diameter		58	.138		7.20	7.95		15.15	19.95
1870	1-1/2" diameter		51	.157		8.40	9.05		17.45	23
1880	2" diameter		40	.200		12	11.50		23.50	30.50
1890	2-1/2" diameter	Q-1	57	.281		18.20	14.55		32.75	42
1900	3" diameter		50	.320		23	16.60		39.60	50.50
1910	4" diameter		45	.356		32	18.40		50.40	63.50
1920	5" diameter		37	.432		58.50	22.50		81	98.50
1930	6" diameter	Q-2	42	.571		63.50	30.50		94	117
3990	Fittings: coupling material required at joints not incl. in fitting price.									
3994	Add 1 selected coupling, material only, per joint far installed price.									
4000	Elbow, 90° or 45°, painted									
4030	3/4" diameter	1 Plum	50	.160	Ea.	56	9.20		65.20	76
4040	1" diameter		50	.160		30	9.20		39.20	47
4050	1-1/4" diameter		40	.200		30	11.50		41.50	50.50
4060	1-1/2" diameter		33	.242		30	13.95		43.95	54
4070	2" diameter		25	.320		30	18.40		48.40	61
4080	2-1/2" diameter	Q-1	40	.400		30	20.50		50.50	64.50
4090	3" diameter		33	.485		53	25		78	96.50
4100	4" diameter		25	.640		57.50	33		90.50	114
4110	5" diameter		20	.800		137	41.50		178.50	214
4120	6" diameter	Q-2	25	.960		161	51.50		212.50	256
4250	Far galvanized elbows, add					26%				
4690	Tee, painted									
4700	3/4" diameter	1 Plum	38	.211	Ea.	60.50	12.10		72.60	85
4740	1" diameter		33	.242		46.50	13.95		60.45	72.50
4750	1-1/4" diameter		27	.296		46.50	17.05		63.55	77.50
4760	1-1/2" diameter		22	.364		46.50	21		67.50	83
4770	2" diameter		17	.471		46.50	27		73.50	92.50
4780	2-1/2" diameter	Q-1	27	.593		46.50	30.50		77	98
4790	3" diameter		22	.727		64	37.50		101.50	127
4800	4" diameter		17	.941		97	49		146	181
4810	5" diameter		13	1.231		226	64		290	345
4820	6" diameter	Q-2	17	1.412		261	76		337	400
4900	Far galvanized tees, add					24%				
4906	Couplings, rigid style, painted									
4908	1" diameter	1 Plum	100	.080	Ea.	23	4.60		27.60	32.50
4909	1-1/4" diameter		100	.080		23	4.60		27.60	32.50
4910	1-1/2" diameter		67	.119		23	6.85		29.85	36
4912	2" diameter		50	.160		29.50	9.20		38.70	46.50
4914	2-1/2" diameter	Q-1	80	.200		33.50	10.35		43.85	52.50
4916	3" diameter		67	.239		39	12.35		51.35	61.50
4918	4" diameter		50	.320		54.50	16.60		71.10	85
4920	5" diameter		40	.400		70	20.50		90.50	109
4922	6" diameter	Q-2	50	.480		93	26		119	141
4940	Flexible, standard, painted									
4950	3/4" diameter	1 Plum	100	.080	Ea.	16.60	4.60		21.20	25
4960	1" diameter		100	.080		16.60	4.60		21.20	25
4970	1-1/4" diameter		80	.100		22	5.75		27.75	32.50
4980	1-1/2" diameter		67	.119		24	6.85		30.85	36.50
4990	2" diameter		50	.160		25.50	9.20		34.70	42
5000	2-1/2" diameter	Q-1	80	.200		29.50	10.35		39.85	48
5010	3" diameter		67	.239		33	12.35		45.35	55

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.48 Pipe, Fittings and Valves, Steel, Grooved-Joint		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5020	3-1/2" diameter	Q-1	57	.281	Ea.	47	14.55		61.55	73.50
5030	4" diameter		50	.320		47.50	16.60		64.10	77
5040	5" diameter	▼	40	.400		72	20.50		92.50	111
5050	6" diameter	Q-2	50	.480		85	26		111	133

22 11 13.64 Pipe, Stainless Steel

0010	PIPE, STAINLESS STEEL									
3500	Threaded, couplings and clevis hanger assemblies, 10' O.C.									
3520	Schedule 40, type 304									
3540	1/4" diameter	1 Plum	54	.148	L.F.	10.10	8.55		18.65	24
3550	3/8" diameter		53	.151		10.35	8.70		19.05	24.50
3560	1/2" diameter		52	.154		12.05	8.85		20.90	26.50
3580	1" diameter	▼	45	.178		18.50	10.25		28.75	36
3610	2" diameter	Q-1	57	.281		44	14.55		58.55	70.50
3640	4" diameter	Q-2	51	.471		137	25.50		162.50	188
3740	For small quantities, add					10%				
4250	Schedule 40, type 316									
4290	1/4" diameter	1 Plum	54	.148	L.F.	10.90	8.55		19.45	25
4300	3/8" diameter		53	.151		12	8.70		20.70	26.50
4310	1/2" diameter		52	.154		14.70	8.85		23.55	29.50
4320	3/4" diameter		51	.157		17.15	9.05		26.20	32.50
4330	1" diameter	▼	45	.178		24.50	10.25		34.75	42.50
4360	2" diameter	Q-1	57	.281		52.50	14.55		67.05	79.50
4390	4" diameter	Q-2	51	.471		152	25.50		177.50	205
4490	For small quantities, add					10%				

22 11 13.74 Pipe, Plastic

0010	PIPE, PLASTIC									
1800	PVC, couplings 10' O.C., clevis hanger assemblies, 3 per 10'									
1820	Schedule 40									
1860	1/2" diameter	1 Plum	54	.148	L.F.	3.02	8.55		11.57	16.20
1870	3/4" diameter		51	.157		3.33	9.05		12.38	17.30
1880	1" diameter		46	.174		3.96	10		13.96	19.45
1890	1-1/4" diameter		42	.190		4.94	10.95		15.89	22
1900	1-1/2" diameter	▼	36	.222		4.76	12.80		17.56	24.50
1910	2" diameter	Q-1	59	.271		5.95	14.05		20	27.50
1920	2-1/2" diameter		56	.286		9.15	14.80		23.95	32.50
1930	3" diameter		53	.302		11.05	15.65		26.70	35.50
1940	4" diameter		48	.333		14.20	17.25		31.45	41.50
1950	5" diameter		43	.372		28	19.25		47.25	60
1960	6" diameter	▼	39	.410	▼	29.50	21.50		51	64.50
4100	DWV type, schedule 40, couplings 10' O.C., clevis hanger assy's, 3 per 10'									
4210	ABS, schedule 40, foam core type									
4212	Plain end black									
4214	1-1/2" diameter	1 Plum	39	.205	L.F.	2.96	11.80		14.76	21
4216	2" diameter	Q-1	62	.258		3.40	13.35		16.75	23.50
4218	3" diameter		56	.286		6.10	14.80		20.90	29
4220	4" diameter		51	.314		8.70	16.25		24.95	34
4222	6" diameter	▼	42	.381	▼	20.50	19.75		40.25	52.50
4240	To delete coupling & hangers, subtract									
4244	1-1/2" diam. to 6" diam.					43%	48%			
4400	PVC									
4410	1-1/4" diameter	1 Plum	42	.190	L.F.	3.41	10.95		14.36	20.50
4420	1-1/2" diameter	"	36	.222		2.98	12.80		15.78	22.50

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.74 Pipe, Plastic		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4460	2" diameter	Q-1	59	.271	L.F.	3.39	14.05		17.44	24.50
4470	3" diameter		53	.302		6.05	15.65		21.70	30
4480	4" diameter		48	.333		8.35	17.25		25.60	35
4490	6" diameter		39	.410		17.25	21.50		38.75	51
5300	CPVC, socket joint, couplings 10' O.C., clevis hanger assemblies, 3 per 10'									
5302	Schedule 40									
5304	1/2" diameter	1 Plum	54	.148	L.F.	3.65	8.55		12.20	16.85
5305	3/4" diameter		51	.157		4.30	9.05		13.35	18.40
5306	1" diameter		46	.174		5.50	10		15.50	21
5307	1-1/4" diameter		42	.190		6.90	10.95		17.85	24
5308	1-1/2" diameter		36	.222		8.05	12.80		20.85	28
5309	2" diameter	Q-1	59	.271		9.90	14.05		23.95	32
5310	2-1/2" diameter		56	.286		16.60	14.80		31.40	41
5311	3" diameter		53	.302		20	15.65		35.65	45.50
5360	CPVC, threaded, couplings 10' O.C., clevis hanger assemblies, 3 per 10'									
5380	Schedule 40									
5460	1/2" diameter	1 Plum	54	.148	L.F.	4.45	8.55		13	17.75
5470	3/4" diameter		51	.157		5.70	9.05		14.75	19.90
5480	1" diameter		46	.174		6.95	10		16.95	22.50
5490	1-1/4" diameter		42	.190		8	10.95		18.95	25.50
5500	1-1/2" diameter		36	.222		9	12.80		21.80	29
5510	2" diameter	Q-1	59	.271		11.10	14.05		25.15	33
5520	2-1/2" diameter		56	.286		17.85	14.80		32.65	42
5530	3" diameter		53	.302		22	15.65		37.65	47.50
7280	PEX, flexible, no couplings or hangers									
7282	Note: For labor costs add 25% to the couplings and fittings labor total.									
7285	For fittings see Section 23 83 16.10 7000									
7300	Non-barrier type, hot/cold tubing rolls									
7310	1/4" diameter x 100'				L.F.	.47			.47	.52
7350	3/8" diameter x 100'					.52			.52	.57
7360	1/2" diameter x 100'					.58			.58	.64
7370	1/2" diameter x 500'					.58			.58	.64
7380	1/2" diameter x 1000'					.58			.58	.64
7400	3/4" diameter x 100'					1.05			1.05	1.16
7410	3/4" diameter x 500'					1.05			1.05	1.16
7420	3/4" diameter x 1000'					1.05			1.05	1.16
7460	1" diameter x 100'					1.82			1.82	2
7470	1" diameter x 300'					1.82			1.82	2
7480	1" diameter x 500'					1.82			1.82	2
7500	1-1/4" diameter x 100'					3.08			3.08	3.39
7510	1-1/4" diameter x 300'					3.08			3.08	3.39
7540	1-1/2" diameter x 100'					4.19			4.19	4.61
7550	1-1/2" diameter x 300'					4.19			4.19	4.61
7596	Most sizes available in red or blue									
7700	Non-barrier type, hot/cold tubing straight lengths									
7710	1/2" diameter x 20'				L.F.	.58			.58	.64
7750	3/4" diameter x 20'					1.06			1.06	1.17
7760	1" diameter x 20'					1.82			1.82	2
7770	1-1/4" diameter x 20'					3.08			3.08	3.39
7780	1-1/2" diameter x 20'					4.19			4.19	4.61
7790	2" diameter					8.20			8.20	9
7796	Most sizes available in red or blue									

22 11 Facility Water Distribution

22 11 19 – Domestic Water Piping Specialties

22 11 19.10 Flexible Connectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	FLEXIBLE CONNECTORS , Corrugated, 7/8" O.D., 1/2" I.D.									
0050	Gas, seamless brass, steel fittings									
0200	12" long	1 Plum	36	.222	Ea.	17.40	12.80		30.20	38.50
0220	18" long		36	.222		21.50	12.80		34.30	43.50
0240	24" long		34	.235		25.50	13.55		39.05	48.50
0280	36" long		32	.250		30.50	14.40		44.90	55
0340	60" long	▼	30	.267	▼	46	15.35		61.35	73.50
2000	Water, copper tubing, dielectric separators									
2100	12" long	1 Plum	36	.222	Ea.	17.35	12.80		30.15	38.50
2260	24" long	"	34	.235	"	26	13.55		39.55	49

22 11 19.14 Flexible Metal Hose

0010	FLEXIBLE METAL HOSE , Connectors, standard lengths									
0100	Brass braided, brass ends									
0120	3/8" diameter x 12"	1 Stpi	26	.308	Ea.	19.60	18		37.60	48.50
0160	3/4" diameter x 12"		20	.400		29.50	23.50		53	68
0180	1" diameter x 18"		19	.421		35.50	24.50		60	76
0200	1-1/2" diameter x 18"		13	.615		48	36		84	107
0220	2" diameter x 18"	▼	11	.727	▼	63	42.50		105.50	134

22 11 19.26 Pressure Regulators

0010	PRESSURE REGULATORS									
3000	Steam, high capacity, brass body, stainless steel trim									
3020	Threaded, 1/2" diameter	1 Stpi	24	.333	Ea.	1,975	19.50		1,994.50	2,200
3030	3/4" diameter		24	.333		2,150	19.50		2,169.50	2,375
3040	1" diameter		19	.421		2,400	24.50		2,424.50	2,675
3060	1-1/4" diameter		15	.533		2,500	31		2,531	2,800
3080	1-1/2" diameter		13	.615		3,025	36		3,061	3,375
3100	2" diameter	▼	11	.727		3,725	42.50		3,767.50	4,150
3120	2-1/2" diameter	Q-5	12	1.333		4,650	70		4,720	5,225
3140	3" diameter	"	11	1.455		5,075	76.50		5,151.50	5,700
3500	Flanged connection, iron body, 125 lb. W.S.P.									
3520	3" diameter	Q-5	11	1.455	Ea.	5,800	76.50		5,876.50	6,525
3540	4" diameter	"	5	3.200	"	7,325	168		7,493	8,300

22 11 19.38 Water Supply Meters

0010	WATER SUPPLY METERS									
2000	Domestic/commercial, brass									
2020	Threaded									
2060	5/8" diameter, to 20 GPM	1 Plum	16	.500	Ea.	48.50	29		77.50	97
2080	3/4" diameter, to 30 GPM	▼	14	.571	▼	88.50	33		121.50	147
2100	1" diameter, to 50 GPM	▼	12	.667	▼	134	38.50		172.50	206
2300	Threaded/flanged									
2340	1-1/2" diameter, to 100 GPM	1 Plum	8	1	Ea.	330	57.50		387.50	445
2360	2" diameter, to 160 GPM	"	6	1.333	"	445	76.50		521.50	605
2600	Flanged, compound									
2640	3" diameter, 320 GPM	Q-1	3	5.333	Ea.	3,025	276		3,301	3,750
2660	4" diameter, to 500 GPM		1.50	10.667		4,850	555		5,405	6,150
2680	6" diameter, to 1,000 GPM		1	16		7,725	830		8,555	9,750
2700	8" diameter, to 1,800 GPM	▼	.80	20	▼	12,100	1,025		13,125	14,900

22 11 Facility Water Distribution

22 11 19 – Domestic Water Piping Specialties

22 11 19.42 Backflow Preventers

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	BACKFLOW PREVENTERS , Includes valves									
0020	and four test cocks, corrosion resistant, automatic operation									
4000	Reduced pressure principle									
4100	Threaded, bronze, valves ore boll									
4120	3/4" pipe size	1 Plum	16	.500	Eo.	445	29		474	535
4140	1" pipe size		14	.571		480	33		513	575
4150	1-1/4" pipe size		12	.667		845	38.50		883.50	990
4160	1-1/2" pipe size		10	.800		960	46		1,006	1,125
4180	2" pipe size		7	1.143		1,075	66		1,141	1,300
5000	Flanged, bronze, valves ore OS&Y									
5060	2-1/2" pipe size	Q-1	5	3.200	Eo.	4,025	166		4,191	4,675
5080	3" pipe size		4.50	3.556		4,650	184		4,834	5,375
5100	4" pipe size		3	5.333		5,500	276		5,776	6,475
5120	6" pipe size	Q-2	3	8		8,750	430		9,180	10,300
5600	Flanged, iron, valves ore OS&Y									
5660	2-1/2" pipe size	Q-1	5	3.200	Eo.	3,025	166		3,191	3,575
5680	3" pipe size		4.50	3.556		3,175	184		3,359	3,775
5700	4" pipe size		3	5.333		3,975	276		4,251	4,800
5720	6" pipe size	Q-2	3	8		5,775	430		6,205	7,000
5740	8" pipe size		2	12		10,100	645		10,745	12,100
5760	10" pipe size		1	24		13,600	1,300		14,900	16,900

22 11 19.50 Vacuum Breakers

0010	VACUUM BREAKERS									
0013	See also backflow preventers Section 22 11 19.42									
1000	Anti-siphon continuous pressure type									
1010	Mox. 150 PSI - 210°F									
1020	Bronze body									
1030	1/2" size	1 Stpi	24	.333	Eo.	187	19.50		206.50	236
1040	3/4" size		20	.400		187	23.50		210.50	242
1050	1" size		19	.421		194	24.50		218.50	250
1060	1-1/4" size		15	.533		380	31		411	465
1070	1-1/2" size		13	.615		470	36		506	570
1080	2" size		11	.727		485	42.50		527.50	595
1200	Mox. 125 PSI with otmospheric vent									
1210	Brass, in-line construction									
1220	1/4" size	1 Stpi	24	.333	Eo.	117	19.50		136.50	159
1230	3/8" size	"	24	.333		117	19.50		136.50	159
1260	For polished chrome finish, add					13%				
2000	Anti-siphon, non-continuous pressure type									
2010	Hot or cold water 125 PSI - 210°F									
2020	Bronze body									
2030	1/4" size	1 Stpi	24	.333	Eo.	64	19.50		83.50	100
2040	3/8" size		24	.333		64	19.50		83.50	100
2050	1/2" size		24	.333		72.50	19.50		92	110
2060	3/4" size		20	.400		86.50	23.50		110	131
2070	1" size		19	.421		134	24.50		158.50	184
2080	1-1/4" size		15	.533		235	31		266	305
2090	1-1/2" size		13	.615		276	36		312	360
2100	2" size		11	.727		430	42.50		472.50	535
2110	2-1/2" size		8	1		1,225	58.50		1,283.50	1,450
2120	3" size		6	1.333		1,625	78		1,703	1,925
2150	For polished chrome finish, odd					50%				

22 11 Facility Water Distribution

22 11 19 – Domestic Water Piping Specialties

22 11 19.54 Water Hammer Arresters/Shock Absorbers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	WATER HAMMER ARRESTERS/SHOCK ABSORBERS									
0490	Copper									
0500	3/4" male I.P.S. For 1 to 11 fixtures	1 Plum	12	.667	Ea.	28	38.50		66.50	89
0600	1" male I.P.S. For 12 to 32 fixtures		8	1		45.50	57.50		103	137
0700	1-1/4" male I.P.S. For 33 to 60 fixtures		8	1		47	57.50		104.50	139
0800	1-1/2" male I.P.S. For 61 to 113 fixtures		8	1		67.50	57.50		125	161
0900	2" male I.P.S. For 114 to 154 fixtures		8	1		98.50	57.50		156	195
1000	2-1/2" male I.P.S. For 155 to 330 fixtures	▼	4	2	▼	305	115		420	510

22 11 19.64 Hydrants

0010	HYDRANTS									
0050	Wall type, moderate climate, bronze, encased									
0200	3/4" IPS connection	1 Plum	16	.500	Ea.	705	29		734	825
0300	1" IPS connection		14	.571		810	33		843	940
0500	Anti-siphon type, 3/4" connection	▼	16	.500	▼	610	29		639	715
1000	Non-freeze, bronze, exposed									
1100	3/4" IPS connection, 4" to 9" thick wall	1 Plum	14	.571	Ea.	480	33		513	575
1120	10" to 14" thick wall		12	.667		515	38.50		553.50	630
1140	15" to 19" thick wall		12	.667		580	38.50		618.50	695
1160	20" to 24" thick wall	▼	10	.800	▼	625	46		671	760
1200	For 1" IPS connection, add					15%	10%			
1240	For 3/4" adapter type vacuum breaker, add				Ea.	60			60	66
1280	For anti-siphon type, add				"	126			126	139
2000	Non-freeze bronze, encased, anti-siphon type									
2100	3/4" IPS connection, 5" to 9" thick wall	1 Plum	14	.571	Ea.	1,225	33		1,258	1,375
2120	10" to 14" thick wall		12	.667		1,250	38.50		1,288.50	1,425
2140	15" to 19" thick wall	▼	12	.667	▼	1,300	38.50		1,338.50	1,500
3000	Ground box type, bronze frame, 3/4" IPS connection									
3080	Non-freeze, all bronze, polished face, set flush									
3100	2 feet depth of bury	1 Plum	8	1	Ea.	905	57.50		962.50	1,075
3140	4 feet depth of bury		8	1		1,050	57.50		1,107.50	1,225
3180	6 feet depth of bury		7	1.143		1,175	66		1,241	1,400
3220	8 feet depth of bury	▼	5	1.600	▼	1,325	92		1,417	1,600
3400	For 1" IPS connection, add					15%	10%			
3550	For 2" connection, add					445%	24%			
3600	For tapped drain port in box, add				▼	82			82	90
5000	Moderate climate, all bronze, polished face									
5020	and scorioted cover, set flush									
5100	3/4" IPS connection	1 Plum	16	.500	Ea.	625	29		654	735
5120	1" IPS connection	"	14	.571	▼	770	33		803	895
5200	For tapped drain port in box, add				▼	82			82	90

22 11 23 – Domestic Water Pumps

22 11 23.10 General Utility Pumps

0010	GENERAL UTILITY PUMPS									
2000	Single stage									
3000	Double suction,									
3190	75 HP, to 2500 GPM	Q-3	.28	114	Ea.	20,100	6,275		26,375	31,600
3220	100 HP, to 3000 GPM		.26	123	▼	25,500	6,750		32,250	38,300
3240	150 HP, to 4000 GPM	▼	.24	133	▼	36,000	7,300		43,300	50,500

22 13 Facility Sanitary Sewerage

22 13 16 – Sanitary Waste and Vent Piping

22 13 16.20 Pipe, Cast Iron		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	PIPE, CAST IRON, Soil, on clevis hanger assemblies, 5' O.C.									
0020	Single hub, service wt., lead & ookum joints 10' O.C.									
2120	2" diameter	Q-1	63	.254	L.F.	9.30	13.15		22.45	30
2140	3" diameter		60	.267		12.95	13.80		26.75	35.50
2160	4" diameter	▼	55	.291		16.85	15.05		31.90	41.50
2180	5" diameter	Q-2	76	.316		23	16.95		39.95	51
2200	6" diameter	"	73	.329		29	17.65		46.65	58.50
2220	8" diameter	Q-3	59	.542		44	29.50		73.50	93.50
2240	10" diameter		54	.593		71	32.50		103.50	127
2260	12" diameter		48	.667		101	36.50		137.50	166
2320	For service weight, double hub, add					10%				
2340	For extra heavy, single hub, add					48%	4%			
2360	For extro heovy, double hub, odd				▼	71%	4%			
2400	Lead for coulking, (1#/diom. in.)	Q-1	160	.100	Lb.	1.04	5.20		6.24	8.95
2420	Ookum for coulking, (1/8#/diam. in.)	"	40	.400	"	4.80	20.50		25.30	37
4000	No hub, couplings 10' O.C.									
4100	1-1/2" diameter	Q-1	71	.225	L.F.	9.15	11.65		20.80	27.50
4120	2" diameter		67	.239		9.40	12.35		21.75	29
4140	3" diameter		64	.250		13.35	12.95		26.30	34
4160	4" diameter		58	.276		16.95	14.30		31.25	40

22 13 16.50 Shower Drains

0010	SHOWER DRAINS										
2780	Shower, with strainer, uniform diam. trap, bronze top										
2800	2" and 3" pipe size	Q-1	8	2	Eq.	395		104		499	590
2820	4" pipe size	"	7	2.286		435		118		553	655
2840	For galvanized body, add				▼	175				175	193

22 13 16.60 Traps

0010	TRAPS										
0030	Cast iron, service weight										
0050	Running P trap, without vent										
1100	2"	Q-1	16	1	Eq.	164		52		216	258
1140	3"		14	1.143		164		59		223	270
1150	4"	▼	13	1.231		164		64		228	277
1160	6"	Q-2	17	1.412	▼	605		76		681	780
1180	Running trap, single hub, with vent										
2080	3" pipe size, 3" vent	Q-1	14	1.143	Eq.	109		59		168	210
2120	4" pipe size, 4" vent	"	13	1.231		149		64		213	261
2300	For double hub, vent, add					10%		20%			
3000	P trap, B&S, 2" pipe size	Q-1	16	1		32.50		52		84.50	114
3040	3" pipe size	"	14	1.143	▼	49		59		108	143
3350	Deep seal trap, B&S										
3400	1-1/4" pipe size	Q-1	14	1.143	Eq.	51		59		110	146
3410	1-1/2" pipe size		14	1.143		51		59		110	146
3420	2" pipe size		14	1.143		46		59		105	140
3440	3" pipe size		12	1.333	▼	60		69		129	170
4700	Copper, drainage, drum trap										
4800	3" x 5" solid, 1-1/2" pipe size	1 Plum	16	.500	Eq.	286		29		315	360
4840	3" x 6" swivel, 1-1/2" pipe size	"	16	.500	"	455		29		484	545
5100	P trap, standard pattern										
5200	1-1/4" pipe size	1 Plum	18	.444	Eq.	211		25.50		236.50	271
5240	1-1/2" pipe size		17	.471		204		27		231	266
5260	2" pipe size		15	.533		315		30.50		345.50	390

22 13 Facility Sanitary Sewerage

22 13 16 – Sanitary Waste and Vent Piping

22 13 16.60 Traps		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
5280	3" pipe size	1 Plum	11	.727	Ea.	760	42		802	900
5340	With cleanout, swivel joint and slip joint									
5360	1-1/4" pipe size	1 Plum	18	.444	Ea.	148	25.50		173.50	202
5400	1-1/2" pipe size	"	17	.471	"	310	27		337	380

22 13 16.80 Vent Flashing and Caps

0010	VENT FLASHING AND CAPS									
0120	Vent caps									
0140	Cast iron									
0180	2-1/2" - 3-5/8" pipe	1 Plum	21	.381	Ea.	45	22		67	82.50
0190	4" - 4-1/8" pipe	"	19	.421	"	55	24		79	97
0900	Vent flashing									
1000	Aluminum with lead ring									
1020	1-1/4" pipe	1 Plum	20	.400	Ea.	11.80	23		34.80	48
1030	1-1/2" pipe		20	.400		14.15	23		37.15	50.50
1040	2" pipe		18	.444		12.70	25.50		38.20	52.50
1050	3" pipe		17	.471		14.05	27		41.05	56.50
1060	4" pipe		16	.500		16.95	29		45.95	62
1350	Copper with neoprene ring									
1400	1-1/4" pipe	1 Plum	20	.400	Ea.	20.50	23		43.50	57.50
1430	1-1/2" pipe		20	.400		20.50	23		43.50	57.50
1440	2" pipe		18	.444		21.50	25.50		47	62
1450	3" pipe		17	.471		25.50	27		52.50	69
1460	4" pipe		16	.500		28	29		57	74

22 13 19 – Sanitary Waste Piping Specialties

22 13 19.13 Sanitary Drains

0010	SANITARY DRAINS									
0400	Deck, auto park, C.I., 13" tap									
0440	3", 4", 5", and 6" pipe size	Q-1	8	2	Ea.	1,325	104		1,429	1,625
0480	For galvanized body, add				"	720			720	790
2000	Floor, medium duty, C.I., deep flange, 7" diam. tap									
2040	2" and 3" pipe size	Q-1	12	1.333	Ea.	186	69		255	310
2080	For galvanized body, add					89.50			89.50	98.50
2120	With polished bronze tap				▼	291			291	320
2400	Heavy duty, with sediment bucket, C.I., 12" diam. loose grate									
2420	2", 3", 4", 5", and 6" pipe size	Q-1	9	1.778	Ea.	640	92		732	845
2460	With polished bronze tap				"	905			905	995
2500	Heavy duty, cleanout & trap w/bucket, C.I., 15" tap									
2540	2", 3", and 4" pipe size	Q-1	6	2.667	Ea.	6,075	138		6,213	6,900
2560	For galvanized body, add					1,550			1,550	1,725
2580	With polished bronze tap				▼	6,575			6,575	7,250

22 13 23 – Sanitary Waste Interceptors

22 13 23.10 Interceptors

0010	INTERCEPTORS									
0150	Grease, fabricated steel, 4 GPM, 8 lb. fat capacity	1 Plum	4	2	Ea.	1,100	115		1,215	1,375
0200	7 GPM, 14 lb. fat capacity		4	2		1,525	115		1,640	1,850
1000	10 GPM, 20 lb. fat capacity		4	2		1,800	115		1,915	2,150
1040	15 GPM, 30 lb. fat capacity		4	2		2,650	115		2,765	3,100
1060	20 GPM, 40 lb. fat capacity	▼	3	2.667		3,250	153		3,403	3,800
1120	50 GPM, 100 lb. fat capacity	Q-1	2	8		9,575	415		9,990	11,100
1160	100 GPM, 200 lb. fat capacity	"	2	8	▼	13,600	415		14,015	15,500
1580	For seepage pan, add					7%				

22 13 Facility Sanitary Sewerage

22 13 23 – Sanitary Waste Interceptors

22 13 23.10 Interceptors

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
3000	Hair, cast iron, 1-1/4" and 1-1/2" pipe connection	1 Plum	8	1	Ea.	415	57.50		472.50	540
3100	For chrome-plated cast iron, add					253			253	279
4000	Oil, fabricated steel, 10 GPM, 2" pipe size	1 Plum	4	2		2,450	115		2,565	2,875
4100	15 GPM, 2" or 3" pipe size		4	2		3,375	115		3,490	3,875
4120	20 GPM, 2" or 3" pipe size		3	2.667		4,075	153		4,228	4,700
4220	100 GPM, 3" pipe size	Q-1	2	8		13,600	415		14,015	15,500
6000	Solids, precious metals recovery, C.I., 1-1/4" to 2" pipe	1 Plum	4	2		620	115		735	860
6100	Dental Lab., large, C.I., 1-1/2" to 2" pipe	"	3	2.667		2,175	153		2,328	2,625

22 13 29 – Sanitary Sewerage Pumps

22 13 29.13 Wet-Pit-Mounted, Vertical Sewerage Pumps

0010 WET-PIT-MOUNTED, VERTICAL SEWERAGE PUMPS

0020	Controls incl. alarm/disconnect panel w/wire. Excavation not included									
0260	Simplex, 9 GPM at 60 PSIG, 91 gal. tank				Ea.	3,325			3,325	3,650
0300	Unit with manway, 26" I.D., 18" high					3,700			3,700	4,050
0340	26" I.D., 36" high					3,750			3,750	4,125
0380	43" I.D., 4' high					3,975			3,975	4,375
3000	Indoor residential type installation									
3020	Simplex, 9 GPM at 60 PSIG, 91 gal. HDPE tank				Ea.	3,350			3,350	3,675

22 13 29.14 Sewage Ejector Pumps

0010 SEWAGE EJECTOR PUMPS, With operating and level controls

0100	Simplex system incl. tank, cover, pump 15' head									
0500	37 gal. PE tank, 12 GPM, 1/2 HP, 2" discharge	Q-1	3.20	5	Ea.	480	259		739	915
0510	3" discharge		3.10	5.161		520	267		787	975
0530	87 GPM, .7 HP, 2" discharge		3.20	5		735	259		994	1,200
0540	3" discharge		3.10	5.161		795	267		1,062	1,275
0600	45 gal. coated stl. tank, 12 GPM, 1/2 HP, 2" discharge		3	5.333		855	276		1,131	1,350
0610	3" discharge		2.90	5.517		890	286		1,176	1,400
0630	87 GPM, .7 HP, 2" discharge		3	5.333		1,100	276		1,376	1,625
0640	3" discharge		2.90	5.517		1,150	286		1,436	1,700
0660	134 GPM, 1 HP, 2" discharge		2.80	5.714		1,175	296		1,471	1,750
0680	3" discharge		2.70	5.926		1,250	305		1,555	1,850
0700	70 gal. PE tank, 12 GPM, 1/2 HP, 2" discharge		2.60	6.154		920	320		1,240	1,500
0710	3" discharge		2.40	6.667		980	345		1,325	1,600
0730	87 GPM, 0.7 HP, 2" discharge		2.50	6.400		1,200	330		1,530	1,800
0740	3" discharge		2.30	6.957		1,275	360		1,635	1,950
0760	134 GPM, 1 HP, 2" discharge		2.20	7.273		1,300	375		1,675	2,000
0770	3" discharge		2	8		1,375	415		1,790	2,150

22 14 Facility Storm Drainage

22 14 23 – Storm Drainage Piping Specialties

22 14 23.33 Backwater Valves

0010 BACKWATER VALVES, C.I. Body

6980	Brass gate and automatic flapper valves									
7000	3" and 4" pipe size	Q-1	13	1.231	Ea.	1,900	64		1,964	2,175
7100	5" and 6" pipe size	"	13	1.231	"	2,900	64		2,964	3,300
7240	Bronze flapper valve, batted cover									
7260	2" pipe size	Q-1	16	1	Ea.	555	52		607	690
7300	4" pipe size	"	13	1.231		1,075	64		1,139	1,275
7340	6" pipe size	Q-2	17	1.412		1,525	76		1,601	1,800

22 14 Facility Storm Drainage

22 14 26 – Facility Storm Drains

22 14 26.13 Roof Drains		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	ROOF DRAINS									
0140	Cornice, C.I., 45° or 90° outlet									
0200	3" and 4" pipe size	Q-1	12	1.333	Ea.	360	69		429	500
0260	For galvanized body, add					70			70	77
0280	For polished bronze dome, add				▼	87.50			87.50	96.50
3860	Roof, flat metal deck, C.I. body, 12" C.I. dome									
3890	3" pipe size	Q-1	14	1.143	Ea.	365	59		424	490
3920	6" pipe size	"	10	1.600	"	635	83		718	825
4620	Main, all aluminum, 12" low profile dome									
4640	2", 3" and 4" pipe size	Q-1	14	1.143	Ea.	405	59		464	535

22 14 26.16 Facility Area Drains

0010	FACILITY AREA DRAINS									
4980	Scupper floor, oblique strainer, C.I.									
5000	6" x 7" top, 2", 3" and 4" pipe size	Q-1	16	1	Ea.	262	52		314	365
5100	8" x 12" top, 5" and 6" pipe size	"	14	1.143		510	59		569	650
5160	For galvanized body, add					40%				
5200	For polished bronze strainer, add				▼	85%				

22 14 26.19 Facility Trench Drains

0010	FACILITY TRENCH DRAINS									
5980	Trench, floor, heavy duty, modular, C.I., 12" x 12" top									
6000	2", 3", 4", 5", & 6" pipe size	Q-1	8	2	Ea.	830	104		934	1,075
6100	For unit with polished bronze top	"	8	2	"	1,250	104		1,354	1,500
6600	Trench, floor, for cement concrete encasement									
6610	Not including trenching or concrete									
6640	Polyester polymer concrete									
6650	4" internal width, with grate									
6660	Light duty steel grate	Q-1	120	.133	L.F.	34	6.90		40.90	48
6670	Medium duty steel grate		115	.139		39	7.20		46.20	54
6680	Heavy duty iron grate	▼	110	.145	▼	60	7.55		67.55	77.50
6700	12" internal width, with grate									
6770	Heavy duty galvanized grate	Q-1	80	.200	L.F.	164	10.35		174.35	196
6800	Fiberglass									
6810	8" internal width, with grate									
6820	Medium duty galvanized grate	Q-1	115	.139	L.F.	96.50	7.20		103.70	117
6830	Heavy duty iron grate	"	110	.145	"	102	7.55		109.55	124

22 14 29 – Sump Pumps

22 14 29.13 Wet-Pit-Mounted, Vertical Sump Pumps

0010	WET-PIT-MOUNTED, VERTICAL SUMP PUMPS									
0400	Molded PVC base, 21 GPM at 15' head, 1/3 HP	1 Plum	5	1.600	Ea.	135	92		227	288
0800	Iron base, 21 GPM at 15' head, 1/3 HP		5	1.600		164	92		256	320
1200	Solid brass, 21 GPM at 15' head, 1/3 HP	▼	5	1.600	▼	289	92		381	460
2000	Sump pump, single stage									
2010	25 GPM, 1 HP, 1-1/2" discharge	Q-1	1.80	8.889	Ea.	3,625	460		4,085	4,675
2020	75 GPM, 1-1/2 HP, 2" discharge		1.50	10.667		3,825	555		4,380	5,025
2030	100 GPM, 2 HP, 2-1/2" discharge		1.30	12.308		3,900	640		4,540	5,250
2040	150 GPM, 3 HP, 3" discharge		1.10	14.545		3,900	755		4,655	5,425
2050	200 GPM, 3 HP, 3" discharge		1	16		4,125	830		4,955	5,800
2060	300 GPM, 10 HP, 4" discharge	Q-2	1.20	20		4,450	1,075		5,525	6,525
2070	500 GPM, 15 HP, 5" discharge		1.10	21.818		5,075	1,175		6,250	7,350
2080	800 GPM, 20 HP, 6" discharge		1	24		6,000	1,300		7,300	8,550
2090	1000 GPM, 30 HP, 6" discharge	▼	.85	28.235	▼	6,575	1,525		8,100	9,550

22 14 Facility Storm Drainage

22 14 29 – Sump Pumps

22 14 29.13 Wet-Pit-Mounted, Vertical Sump Pumps		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2100	1600 GPM, 50 HP, 8" discharge	Q-2	.72	33.333	Ea.	10,300	1,800		12,100	14,000
2110	2000 GPM, 60 HP, 8" discharge	Q-3	.85	37.647		10,500	2,075		12,575	14,700
2202	For general purpose float switch, copper coated float, add	Q-1	5	3.200		108	166		274	370

22 14 29.16 Submersible Sump Pumps

0010	SUBMERSIBLE SUMP PUMPS									
7000	Sump pump, automatic									
7100	Plastic, 1-1/4" discharge, 1/4 HP	1 Plum	6	1.333	Ea.	134	76.50		210.50	263
7140	1/3 HP		5	1.600		194	92		286	350
7160	1/2 HP		5	1.600		238	92		330	400
7180	1-1/2" discharge, 1/2 HP		4	2		272	115		387	475
7500	Cast iron, 1-1/4" discharge, 1/4 HP		6	1.333		189	76.50		265.50	325
7540	1/3 HP		6	1.333		222	76.50		298.50	360
7560	1/2 HP		5	1.600		269	92		361	435

22 31 Domestic Water Softeners

22 31 13 – Residential Domestic Water Softeners

22 31 13.10 Residential Water Softeners

0010	RESIDENTIAL WATER SOFTENERS									
7350	Water softener, automatic, to 30 grains per gallon	2 Plum	5	3.200	Ea.	400	184		584	720
7400	To 100 grains per gallon	"	4	4	"	650	230		880	1,075

22 31 16 – Commercial Domestic Water Softeners

22 31 16.10 Water Softeners

0010	WATER SOFTENERS									
5800	Softener systems, automatic, intermediate sizes									
5820	available, may be used in multiples.									
6000	Hardness capacity between regenerations and flow									
6100	150,000 grains, 37 GPM cont., 51 GPM peak	Q-1	1.20	13.333	Ea.	5,300	690		5,990	6,900
6200	300,000 grains, 81 GPM cont., 113 GPM peak		1	16		9,375	830		10,205	11,600
6300	750,000 grains, 160 GPM cont., 230 GPM peak		.80	20		12,200	1,025		13,225	15,000
6400	900,000 grains, 185 GPM cont., 270 GPM peak	▼	.70	22.857	▼	19,700	1,175		20,875	23,400

22 33 Electric Domestic Water Heaters

22 33 13 – Instantaneous Electric Domestic Water Heaters

22 33 13.10 Hot Water Dispensers

0010	HOT WATER DISPENSERS									
0160	Commercial, 100 cup, 11.3 amp	1 Plum	14	.571	Ea.	510	33		543	615
3180	Household, 60 cup	"	14	.571	"	269	33		302	345

22 33 30 – Residential, Electric Domestic Water Heaters

22 33 30.13 Residential, Small-Capacity Elec. Water Heaters

0010	RESIDENTIAL, SMALL-CAPACITY ELECTRIC DOMESTIC WATER HEATERS									
1000	Residential, electric, glass lined tank, 5 yr., 10 gal., single element	1 Plum	2.30	3.478	Ea.	330	200		530	660
1040	20 gallon, single element		2.20	3.636		410	209		619	765
1060	30 gallon, double element		2.20	3.636		475	209		684	840
1080	40 gallon, double element		2	4		800	230		1,030	1,225
1100	52 gallon, double element		2	4		895	230		1,125	1,325
1180	120 gallon, double element	▼	1.40	5.714	▼	1,900	330		2,230	2,575

22 34 Fuel-Fired Domestic Water Heaters

22 34 46 – Oil-Fired Domestic Water Heaters

22 34 46.10 Residential Oil-Fired Water Heaters				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
3060	70 gallon			1 Plum	1.50	5.333	Eo.	1,975	305		2,280	2,650
22 34 46.20 Commercial Oil-Fired Water Heaters												
0010	COMMERCIAL OIL-FIRED WATER HEATERS											
8000	Oil fired, gloss lined, UL listed, std. controls, vent not incl.											
8060	140 gal., 140 MBH input, 134 GPH			Q-1	2.13	7.512	Eo.	19,900	390		20,290	22,500
8080	140 gal., 199 MBH input, 191 GPH				2	8		20,600	415		21,015	23,300
8100	140 gal., 255 MBH input, 247 GPH				1.60	10		21,200	520		21,720	24,100
8160	140 gal., 540 MBH input, 519 GPH				.96	16.667		28,100	865		28,965	32,200
8180	140 gal., 720 MBH input, 691 GPH				.92	17.391		28,600	900		29,500	32,900
8280	201 gal., 1250 MBH input, 1200 GPH			Q-2	1.22	19.672		43,900	1,050		44,950	49,900
8300	201 gal., 1500 MBH input, 1441 GPH			"	1.16	20.690		47,800	1,100		48,900	54,000
8900	For low water cutoff, odd			1 Plum	8	1		325	57.50		382.50	445
8960	For bronze body hot water circulator, odd			"	4	2		710	115		825	955

22 35 Domestic Water Heat Exchangers

22 35 30 – Water Heating by Steam

22 35 30.10 Water Heating Transfer Package

0010	WATER HEATING TRANSFER PACKAGE, Complete controls,											
0020	expansion tank, converter, air separator											
1000	Hot water, 180°F enter, 200°F leaving, 15# steam											
1010	One pump system, 28 GPM			Q-6	.75	32	Eo.	19,500	1,750		21,250	24,200
1020	35 GPM				.70	34.286		21,200	1,875		23,075	26,100
1040	55 GPM				.65	36.923		25,100	2,025		27,125	30,700
1060	130 GPM				.55	43.636		31,700	2,375		34,075	38,400
1080	255 GPM				.40	60		41,800	3,275		45,075	51,000
1100	550 GPM				.30	80		53,000	4,375		57,375	64,500

22 41 Residential Plumbing Fixtures

22 41 06 – Plumbing Fixtures General

22 41 06.10 Plumbing Fixture Notes

0010	PLUMBING FIXTURE NOTES, Incl. trim fittings unless otherwise noted R224000-40											
0080	For rough-in, supply, waste, and vent, see odd for each type											
0122	For electric water coolers, see Section 22 47 16.10											
0160	For color, unless otherwise noted, odd						Eo.	20%				

22 41 13 – Residential Water Closets, Urinals, and Bidets

22 41 13.40 Water Closets

0010	WATER CLOSETS R224000-40											
0032	For automatic flush, see Line 22 42 39.10 0972											
0150	Tank type, vitreous china, incl. seat, supply pipe w/stop, 1.6 gpf or noted											
0200	Wall hung											
0400	Two piece, close coupled			Q-1	5.30	3.019	Eo.	630	156		786	925
0960	For rough-in, supply, waste, vent and carrier			"	2.73	5.861	"	810	305		1,115	1,350
0999	Floor mounted											
1100	Two piece, close coupled			Q-1	5.30	3.019	Eo.	233	156		389	490
1102	Economy				5.30	3.019		130	156		286	380
1110	Two piece, close coupled, dual flush				5.30	3.019		299	156		455	565
1140	Two piece, close coupled, 1.28 gpf, ADA			G	5.30	3.019		305	156		461	570
1960	For color, odd							30%				

22 41 Residential Plumbing Fixtures

22 41 13 – Residential Water Closets, Urinals, and Bidets

22 41 13.40 Water Closets		Crew	Doily Output	Labor-Hours	Unit	Material	2014 Bore Costs		Total	Total Incl O&P
							Labor	Equipment		
1980	For rough-in, supply, waste and vent	Q-1	3.05	5.246	Eo.	330	272		602	775

22 41 16 – Residential Lavatories and Sinks

22 41 16.10 Lavatories

0010	LAVATORIES, With trim, white unless noted otherwise	R224000-40								
0500	Vanity top, porcelain enamel on cast iron									
0600	20" x 18"	Q-1	6.40	2.500	Eo.	330	130		460	555
0640	33" x 19" oval		6.40	2.500		690	130		820	955
0720	19" round	▼	6.40	2.500	▼	425	130		555	665
0860	For color, odd					25%				
1000	Cultured marble, 19" x 17", single bowl	Q-1	6.40	2.500	Eo.	175	130		305	390
1040	25" x 19", single bowl	"	6.40	2.500	"	206	130		336	425
1580	For color, some price									
1900	Stainless steel, self-rimming, 25" x 22", single bowl, ledge	Q-1	6.40	2.500	Eo.	365	130		495	600
1960	17" x 22", single bowl		6.40	2.500		355	130		485	585
2600	Steel, enameled, 20" x 17", single bowl		5.80	2.759		197	143		340	435
2660	19" round		5.80	2.759		171	143		314	405
2900	Vitreous china, 20" x 16", single bowl		5.40	2.963		260	153		413	520
2960	20" x 17", single bowl		5.40	2.963		176	153		329	425
3020	19" round, single bowl		5.40	2.963		174	153		327	425
3200	22" x 13", single bowl	▼	5.40	2.963	▼	267	153		420	525
3560	For color, odd					50%				
3580	Rough-in, supply, waste and vent for all above lavatories	Q-1	2.30	6.957	Eo.	415	360		775	1,000
4000	Wall hung									
4040	Porcelain enamel on cast iron, 16" x 14", single bowl	Q-1	8	2	Eo.	510	104		614	715
4180	20" x 18", single bowl		8	2		277	104		381	460
4240	22" x 19", single bowl	▼	8	2	▼	685	104		789	910
4580	For color, odd					30%				
6000	Vitreous china, 18" x 15", single bowl with backsplash	Q-1	7	2.286	Eo.	231	118		349	435
6500	For color, odd					30%				
6960	Rough-in, supply, waste and vent for above lavatories	Q-1	1.66	9.639	Eo.	470	500		970	1,275
7000	Pedestal type									
7600	Vitreous china, 27" x 21", white	Q-1	6.60	2.424	Eo.	690	126		816	950
7610	27" x 21", colored		6.60	2.424		865	126		991	1,150
7620	27" x 21", premium color		6.60	2.424		970	126		1,096	1,275
7660	26" x 20", white		6.60	2.424		770	126		896	1,025
7670	26" x 20", colored		6.60	2.424		770	126		896	1,025
7680	26" x 20", premium color		6.60	2.424		970	126		1,096	1,275
7700	24" x 20", white		6.60	2.424		395	126		521	625
7710	24" x 20", colored		6.60	2.424		480	126		606	715
7720	24" x 20", premium color		6.60	2.424		535	126		661	780
7760	21" x 18", white		6.60	2.424		284	126		410	505
7770	21" x 18", colored		6.60	2.424		300	126		426	520
7990	Rough-in, supply, waste and vent for pedestal lavatories	▼	1.66	9.639	▼	470	500		970	1,275

22 41 16.30 Sinks

0010	SINKS, With faucets and drain	R224000-40								
2000	Kitchen, counter top style, P.E. on C.I., 24" x 21" single bowl	Q-1	5.60	2.857	Eo.	275	148		423	525
2100	31" x 22" single bowl		5.60	2.857		575	148		723	855
2200	32" x 21" double bowl		4.80	3.333		340	173		513	635
3000	Stainless steel, self rimming, 19" x 18" single bowl	▼	5.60	2.857	▼	590	148		738	875
3100	25" x 22" single bowl		5.60	2.857		660	148		808	950
4000	Steel, enameled, with ledge, 24" x 21" single bowl	▼	5.60	2.857	▼	505	148		653	780
4100	32" x 21" double bowl	▼	4.80	3.333	▼	495	173		668	805

22 41 Residential Plumbing Fixtures

22 41 16 – Residential Lavatories and Sinks

22 41 16.30 Sinks		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
4960	For calar sinks except stainless steel, add				Ea.	10%				
4980	For rough-in, supply, waste and vent, counter top sinks	Q-1	2.14	7.477		460	385		845	1,100
5000	Kitchen, raised deck, P.E. an C.I.									
5100	32" x 21", dual level, dauble bowl	Q-1	2.60	6.154	Ea.	410	320		730	930
5700	For calar, add					20%				
5790	For rough-in, supply, waste & vent, sinks	Q-1	1.85	8.649		460	450		910	1,175

22 41 19 – Residential Bathtubs

22 41 19.10 Baths

0010	BATHS									
0100	Tubs, recessed parcelain enamel an cast iran, with trim									
0180	48" x 42"	Q-1	4	4	Ea.	2,625	207		2,832	3,225
0220	72" x 36"		3	5.333		2,725	276		3,001	3,425
2000	Enameled farmed steel, 4'-6" lang		5.80	2.759		495	143		638	760
4000	Soaking, acrylic, w/pap-up drain 66" x 36" x 20" deep		5.50	2.909		1,825	151		1,976	2,225
4100	60" x 42" x 20" deep		5	3.200		1,150	166		1,316	1,525
9600	Rough-in, supply, waste and vent, for all above tubs, add		2.07	7.729		485	400		885	1,150

22 41 23 – Residential Showers

22 41 23.20 Showers

0010	SHOWERS									
1500	Stall, with drain only. Add for valve and daar/curtain									
3000	Fiberglass, one piece, with 3 walls, 32" x 32" square	Q-1	5.50	2.909	Ea.	490	151		641	770
3100	36" x 36" square		5.50	2.909		505	151		656	785
3250	64" x 65-3/4" x 81-1/2" fold. seat, whlchr.		3.80	4.211		2,200	218		2,418	2,750
4000	Polypropylene, stall only, w/malded-stone floor, 30" x 30"		2	8		635	415		1,050	1,325
4200	Rough-in, supply, waste and vent for above showers		2.05	7.805		540	405		945	1,200

22 41 23.40 Shower System Components

0010	SHOWER SYSTEM COMPONENTS									
4500	Receptor only									
4510	For tile, 36" x 36"	1 Plum	4	2	Ea.	365	115		480	580
4520	Fiberglass receptor only, 32" x 32"		8	1		107	57.50		164.50	205
4530	34" x 34"		7.80	1.026		126	59		185	228
4540	36" x 36"		7.60	1.053		132	60.50		192.50	237
4600	Rectangular									
4620	32" x 48"	1 Plum	7.40	1.081	Ea.	149	62		211	257
4630	32" x 54"		7.20	1.111		196	64		260	310
4640	32" x 60"		7	1.143		208	66		274	330
5000	Built-in, head, arm, 2.5 GPM valve		4	2		80	115		195	262
5200	Head, arm, by-pass, integral staps, handles		3.60	2.222		255	128		383	475

22 41 36 – Residential Laundry Trays

22 41 36.10 Laundry Sinks

0010	LAUNDRY SINKS, With trim									
0020	Parcelain enamel an cast iran, black iran frame									
0050	24" x 21", single compartment	Q-1	6	2.667	Ea.	580	138		718	845
0100	26" x 21", single compartment	"	6	2.667	"	610	138		748	880
2000	Malded stane, an wall hanger ar legs									
2020	22" x 23", single compartment	Q-1	6	2.667	Ea.	134	138		272	355
2100	45" x 21", dauble compartment	"	5	3.200	"	330	166		496	615
3000	Plastic, an wall hanger ar legs									
3020	18" x 23", single compartment	Q-1	6.50	2.462	Ea.	135	128		263	340
3300	40" x 24", dauble compartment		5.50	2.909		278	151		429	535
5000	Stainless steel, counter top, 22" x 17" single compartment		6	2.667		64	138		202	280

22 41 Residential Plumbing Fixtures

22 41 36 – Residential Laundry Trays

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
22 41 36.10 Laundry Sinks							Labor	Equipment		
5200	33" x 22", double compartment	Q-1	5	3.200	Ea.	79	166		245	335
9600	Rough-in, supply, waste and vent, for all laundry sinks	▼	2.14	7.477	▼	460	385		845	1,100

22 41 39 – Residential Faucets, Supplies and Trim

22 41 39.10 Faucets and Fittings

0010	FAUCETS AND FITTINGS									
0150	Both, faucets, diverter spout combination, sweat	1 Plum	8	1	Ea.	86.50	57.50		144	182
0200	For integral stops, IPS unions, odd					109			109	120
0420	Both, press-bal mix valve w/diverter, spout, shower head, orm/flange	1 Plum	8	1	▼	168	57.50		225.50	272
0810	Bidet									
0812	Fitting, over the rim, swivel spray/pop-up drain	1 Plum	8	1	Ea.	206	57.50		263.50	315
1000	Kitchen sink faucets, top mount, cast spout		10	.800	▼	61.50	46		107.50	137
1100	For spray, add	▼	24	.333	▼	16.15	19.20		35.35	47
1300	Single control lever handle									
1310	With pull out spray									
1320	Polished chrome	1 Plum	10	.800	Ea.	196	46		242	285
2000	Laundry faucets, shelf type, IPS or copper unions		12	.667		49.50	38.50		88	113
2100	Lavatory faucet, centerset, without drain	▼	10	.800	▼	44.50	46		90.50	119
2210	Porcelain cross handles and pop-up drain									
2220	Polished chrome	1 Plum	6.66	1.201	Ea.	189	69		258	310
2230	Polished brass	"	6.66	1.201	"	284	69		353	415
2260	Single lever handle and pop-up drain									
2280	Satin nickel	1 Plum	6.66	1.201	Ea.	277	69		346	410
2290	Polished chrome		6.66	1.201		198	69		267	320
2810	Automatic sensor and operator, with faucet head	G	6.15	1.301		450	75		525	610
4000	Shower by-pass valve with union		18	.444		68.50	25.50		94	114
4200	Shower thermostatic mixing valve, concealed, with shower head trim kit	▼	8	1	▼	330	57.50		387.50	445
4220	Shower pressure balancing mixing valve,									
4230	With shower head, arm, flange and diverter tub spout									
4240	Chrome	1 Plum	6.14	1.303	Ea.	350	75		425	500
4250	Satin nickel		6.14	1.303		475	75		550	635
4260	Polished graphite		6.14	1.303		475	75		550	635
5000	Sillcock, compact, brass, IPS or copper to hose	▼	24	.333	▼	9.70	19.20		28.90	39.50

22 42 Commercial Plumbing Fixtures

22 42 13 – Commercial Water Closets, Urinals, and Bidets

22 42 13.30 Urinals

0010	URINALS									
3000	Wall hung, vitreous china, with hanger & self-closing valve									
3100	Siphon jet type	Q-1	3	5.333	Ea.	315	276		591	765
3120	Blowout type		3	5.333		450	276		726	910
3140	Water saving .5 gpf	G	3	5.333		585	276		861	1,050
3300	Rough-in, supply, waste & vent		2.83	5.654	▼	570	293		863	1,075
5000	Stall type, vitreous china, includes valve		2.50	6.400		715	330		1,045	1,275
6980	Rough-in, supply, waste and vent	▼	1.99	8.040	▼	585	415		1,000	1,275
8000	Waterless (no flush) urinal									
8010	Wall hung									
8014	Fiberglass reinforced polyester									
8020	Standard unit	G	Q-1	21.30	.751	Ea.	385	39	424	480
8030	ADA compliant unit	G	"	21.30	.751	▼	400	39	439	500
8070	For solid color, add	G			▼	48			48	53

22 42 Commercial Plumbing Fixtures

22 42 13 – Commercial Water Closets, Urinals, and Bidets

22 42 13.30 Urinals

			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
8080	For 2" brass flange, (new const.), add		Q-1	96	.167	Ea.	19.20	8.65		27.85	34
8200	Vitreous china										
8220	ADA compliant unit, 14"		Q-1	21.30	.751	Ea.	198	39		237	277
8240	ADA compliant unit, 18"			21.30	.751		320	39		359	410
8250	ADA compliant unit, 15.5"			21.30	.751		272	39		311	360
8270	For solid color, add						48			48	53
8290	Rough-in, supply, waste & vent		Q-1	2.92	5.479	▼	520	284		804	1,000
8400	Trap liquid										
8410	1 quart					Ea.	15.95			15.95	17.55
8420	1 gallon					"	58			58	64

22 42 13.40 Water Closets

0010	WATER CLOSETS										
3000	Bowl only, with flush valve, seat, 1.6 gpf unless noted										
3100	Wall hung		Q-1	5.80	2.759	Ea.	755	143		898	1,050
3200	For rough-in, supply, waste and vent, single WC			2.56	6.250		890	325		1,215	1,475
3300	Floor mounted			5.80	2.759		355	143		498	605
3350	With wall outlet			5.80	2.759		530	143		673	795
3360	With floor outlet, 1.28 gpf			5.80	2.759		585	143		728	860
3362	With floor outlet, 1.28 gpf, ADA			5.80	2.759		620	143		763	900
3370	For rough-in, supply, waste and vent, single WC			2.84	5.634	▼	410	292		702	895
3390	Floor mounted children's size, 10-3/4" high										
3392	With automatic flush sensor, 1.6 gpf		Q-1	6.20	2.581	Ea.	610	134		744	870
3396	With automatic flush sensor, 1.28 gpf			6.20	2.581		610	134		744	870
3400	For rough-in, supply, waste and vent, single WC		▼	2.84	5.634	▼	410	292		702	895

22 42 16 – Commercial Lavatories and Sinks

22 42 16.14 Lavatories

0010	LAVATORIES , With trim, white unless noted otherwise										
0020	Commercial lavatories same as residential. See Section 22 41 16.10										

22 42 16.40 Service Sinks

0010	SERVICE SINKS										
6650	Service, floor, corner, P.E. on C.I., 28" x 28"		Q-1	4.40	3.636	Ea.	990	188		1,178	1,375
6790	For rough-in, supply, waste & vent, floor service sinks			1.64	9.756		1,475	505		1,980	2,400
7000	Service, wall, P.E. on C.I., roll rim, 22" x 18"			4	4		750	207		957	1,150
7100	24" x 20"			4	4		835	207		1,042	1,225
8600	Vitreous china, 22" x 20"			4	4		595	207		802	970
8960	For stainless steel rim guard, front or one side, add						56			56	62
8980	For rough-in, supply, waste & vent, wall service sinks		Q-1	1.30	12.308	▼	1,800	640		2,440	2,975

22 42 23 – Commercial Showers

22 42 23.30 Group Showers

0010	GROUP SHOWERS										
6000	Group, w/pressure balancing valve, rough-in and rigging not included										
6800	Column, 6 heads, no receptors, less partitions		Q-1	3	5.333	Ea.	3,000	276		3,276	3,725
6900	With stainless steel partitions			1	16		9,250	830		10,080	11,500
7600	5 heads, no receptors, less partitions			3	5.333		2,475	276		2,751	3,150
7620	4 heads (1 handicap) no receptors, less partitions			3	5.333		3,975	276		4,251	4,800
7700	With stainless steel partitions			1	16		7,600	830		8,430	9,600
8000	Wall, 2 heads, no receptors, less partitions			4	4		1,375	207		1,582	1,850
8100	With stainless steel partitions			2	8		3,225	415		3,640	4,175

22 42 Commercial Plumbing Fixtures

22 42 33 – Wash Fountains

22 42 33.20 Commercial Wash Fountains		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	COMMERCIAL WASH FOUNTAINS									
1900	Group, foot control									
2000	Precast terrozza, circular, 36" diam., 5 or 6 persons	Q-2	3	8	Ea.	5,800	430		6,230	7,025
2100	54" diameter for 8 or 10 persons		2.50	9.600		9,025	515		9,540	10,700
2400	Semi-circular, 36" diam. for 3 persons		3	8		4,775	430		5,205	5,900
2500	54" diam. for 4 or 5 persons		2.50	9.600		6,775	515		7,290	8,225
2700	Quarter circle (corner), 54" for 3 persons		3.50	6.857		6,000	370		6,370	7,150
3000	Stainless steel, circular, 36" diameter		3.50	6.857		4,850	370		5,220	5,875
3100	54" diameter		2.80	8.571		7,050	460		7,510	8,450
3400	Semi-circular, 36" diameter		3.50	6.857		4,800	370		5,170	5,825
3500	54" diameter		2.80	8.571		5,425	460		5,885	6,650
5610	Group, infrared control, barrier free									
5614	Precast terrozza									
5620	Semi-circular 36" diam. for 3 persons	Q-2	3	8	Ea.	7,150	430		7,580	8,525
5630	46" diam. for 4 persons		2.80	8.571		7,725	460		8,185	9,200
5640	Circular, 54" diam. for 8 persons, button control		2.50	9.600		9,125	515		9,640	10,800
5700	Rough-in, supply, waste and vent for above wash fountains	Q-1	1.82	8.791		660	455		1,115	1,425
6200	Duo for small washrooms, stainless steel		2	8		2,725	415		3,140	3,600
6500	Rough-in, supply, waste & vent for duo fountains		2.02	7.921		405	410		815	1,075

22 42 39 – Commercial Faucets, Supplies, and Trim

22 42 39.10 Faucets and Fittings

0010	FAUCETS AND FITTINGS									
0840	Flush valves, with vacuum breaker									
0850	Water closet									
0860	Exposed, rear spud	1 Plum	8	1	Ea.	148	57.50		205.50	250
0870	Top spud		8	1		149	57.50		206.50	250
0880	Concealed, rear spud		8	1		197	57.50		254.50	305
0890	Tap spud		8	1		159	57.50		216.50	262
0900	Wall hung		8	1		177	57.50		234.50	282
0920	Urinal									
0930	Exposed, stall	1 Plum	8	1	Ea.	149	57.50		206.50	251
0940	Wall, (washout)		8	1		149	57.50		206.50	250
0950	Pedestal, top spud		8	1		143	57.50		200.50	244
0960	Concealed, stall		8	1		156	57.50		213.50	259
0970	Wall (washout)		8	1		168	57.50		225.50	272
0971	Automatic flush sensor and operator for									
0972	urinals or water closets, standard		1 Plum	8	1	Ea.	450	57.50	507.50	580
0980	High efficiency water saving									
0984	Water closets, 1.28 gpf		1 Plum	8	1	Ea.	415	57.50	472.50	545
0988	Urinals, .5 gpf		"	8	1	"	415	57.50	472.50	545
2790	Faucets for lavatories									
2800	Self-closing, center set	1 Plum	10	.800	Ea.	131	46		177	214
2810	Automatic sensor and operator, with faucet head		6.15	1.301		450	75		525	610
3000	Service sink faucet, cast spout, ball hook, hose end		14	.571		80	33		113	138

22 42 39.30 Carriers and Supports

0010	CARRIERS AND SUPPORTS, For plumbing fixtures									
0500	Drinking fountain, wall mounted									
0600	Plate type with studs, top back plate	1 Plum	7	1.143	Ea.	83.50	66		149.50	191
0700	Top front and back plate		7	1.143		102	66		168	212
0800	Top & bottom, front & back plates, w/bearing jacks		7	1.143		148	66		214	262
3000	Lavatory, concealed arm									

22 42 Commercial Plumbing Fixtures

22 42 39 – Commercial Faucets, Supplies, and Trim

22 42 39.30 Carriers and Supports		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3050	Floor mounted, single									
3100	High back fixture	1 Plum	6	1.333	Ea.	465	76.50		541.50	625
3200	Flat slab fixture		6	1.333		400	76.50		476.50	555
3220	Paraplegic		6	1.333		515	76.50		591.50	685
3250	Floor mounted, back to back									
3300	High back fixtures	1 Plum	5	1.600	Ea.	660	92		752	865
3400	Flat slab fixtures		5	1.600		810	92		902	1,025
3430	Paraplegic		5	1.600		755	92		847	970
3500	Wall mounted, in stud or masonry									
3600	High back fixture	1 Plum	6	1.333	Ea.	274	76.50		350.50	415
3700	Flat slab fixture	"	6	1.333	"	237	76.50		313.50	375
4600	Sink, floor mounted									
4650	Exposed arm system									
4700	Single heavy fixture	1 Plum	5	1.600	Ea.	770	92		862	990
4750	Single heavy sink with slob		5	1.600		990	92		1,082	1,250
4800	Back to back, standard fixtures		5	1.600		570	92		662	765
4850	Back to back, heavy fixtures		5	1.600		875	92		967	1,100
4900	Back to back, heavy sink with slab		5	1.600		875	92		967	1,100
4950	Exposed offset arm system									
5000	Single heavy deep fixture	1 Plum	5	1.600	Ea.	735	92		827	950
5100	Plate type system									
5200	With bearing jacks, single fixture	1 Plum	5	1.600	Ea.	845	92		937	1,075
5300	With exposed arms, single heavy fixture		5	1.600		1,075	92		1,167	1,350
5400	Wall mounted, exposed arms, single heavy fixture		5	1.600		395	92		487	575
6000	Urinal, floor mounted, 2" or 3" coupling, blowout type		6	1.333		490	76.50		566.50	655
6100	With fixture or hanger bolts, blowout or washout		6	1.333		350	76.50		426.50	500
6200	With bearing plate		6	1.333		390	76.50		466.50	545
6300	Wall mounted, plate type system		6	1.333		300	76.50		376.50	450
6980	Water closet, siphon jet									
7000	Horizontal, adjustable, caulk									
7040	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	655	86.50		741.50	850
7050	4" pipe size, paraplegic		5.33	1.501		655	86.50		741.50	850
7060	5" pipe size		5.33	1.501		845	86.50		931.50	1,050
7100	Double, 4" pipe size		5	1.600		1,225	92		1,317	1,500
7110	4" pipe size, paraplegic		5	1.600		1,225	92		1,317	1,500
7120	5" pipe size		5	1.600		1,475	92		1,567	1,775
7160	Horizontal, adjustable, extended, coulk									
7180	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	885	86.50		971.50	1,100
7200	5" pipe size		5.33	1.501		1,125	86.50		1,211.50	1,350
7240	Double, 4" pipe size		5	1.600		1,550	92		1,642	1,850
7260	5" pipe size		5	1.600		1,875	92		1,967	2,200
7400	Vertical, adjustable, caulk or thread									
7440	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	905	86.50		991.50	1,125
7460	5" pipe size		5.33	1.501		1,125	86.50		1,211.50	1,350
7480	6" pipe size		5	1.600		1,275	92		1,367	1,550
7520	Double, 4" pipe size		5	1.600		1,350	92		1,442	1,625
7540	5" pipe size		5	1.600		1,550	92		1,642	1,850
7560	6" pipe size		4	2		1,725	115		1,840	2,075
7600	Vertical, adjustable, extended, coulk									
7620	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	905	86.50		991.50	1,125
7640	5" pipe size		5.33	1.501		1,125	86.50		1,211.50	1,350
7680	6" pipe size		5	1.600		1,275	92		1,367	1,550
7720	Double, 4" pipe size		5	1.600		1,350	92		1,442	1,625

22 42 Commercial Plumbing Fixtures

22 42 39 – Commercial Faucets, Supplies, and Trim

22 42 39.30 Carriers and Supports		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
7740	5" pipe size	1 Plum	5	1.600	Ea.	1,550	92		1,642	1,850
7760	6" pipe size	↓	4	2	↓	1,725	115		1,840	2,075
7780	Water closet, blow out									
7800	Vertical offset, caulk or thread									
7820	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	665	86.50		751.50	865
7840	Double, 4" pipe size	"	5	1.600	"	1,150	92		1,242	1,400
7880	Vertical offset, extended, caulk									
7900	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	835	86.50		921.50	1,050
7920	Double, 4" pipe size	"	5	1.600	"	1,300	92		1,392	1,600
7960	Vertical, for floor mounted back-outlet									
7980	Single, 4" thread, 2" vent	1 Plum	5.33	1.501	Ea.	585	86.50		671.50	775
8000	Double, 4" thread, 2" vent	"	6	1.333	"	1,725	76.50		1,801.50	2,025
8040	Vertical, for floor mounted back-outlet, extended									
8060	Single, 4" caulk, 2" vent	1 Plum	6	1.333	Ea.	585	76.50		661.50	760
8080	Double, 4" caulk, 2" vent	"	6	1.333	"	1,725	76.50		1,801.50	2,025
8200	Water closet, residential									
8220	Vertical centerline, floor mount									
8240	Single, 3" caulk, 2" or 3" vent	1 Plum	6	1.333	Ea.	535	76.50		611.50	700
8260	4" caulk, 2" or 4" vent		6	1.333		690	76.50		766.50	870
8280	3" copper sweat, 3" vent		6	1.333		480	76.50		556.50	640
8300	4" copper sweat, 4" vent	↓	6	1.333	↓	580	76.50		656.50	755
8400	Vertical offset, floor mount									
8420	Single, 3" or 4" caulk, vent	1 Plum	4	2	Ea.	665	115		780	910
8440	3" or 4" copper sweat, vent		5	1.600		665	92		757	875
8460	Double, 3" or 4" caulk, vent		4	2		1,150	115		1,265	1,425
8480	3" or 4" copper sweat, vent	↓	5	1.600	↓	1,150	92		1,242	1,400
9000	Water cooler (electric), floor mounted									
9100	Plate type with bearing plate, single	1 Plum	6	1.333	Ea.	335	76.50		411.50	485

22 45 Emergency Plumbing Fixtures

22 45 13 – Emergency Showers

22 45 13.10 Emergency Showers

0010	EMERGENCY SHOWERS , Rough-in not included									
5000	Shower, single head, drench, ball valve, pull, freestanding	Q-1	4	4	Ea.	380	207		587	735
5200	Horizontal or vertical supply		4	4		540	207		747	910
6000	Multi-nozzle, eye/face wash combination		4	4		640	207		847	1,025
6400	Multi-nozzle, 12 spray, shower only		4	4		1,950	207		2,157	2,475
6600	For freeze-proof, add	↓	6	2.667	↓	455	138		593	710

22 45 16 – Eyewash Equipment

22 45 16.10 Eyewash Safety Equipment

0010	EYEWASH SAFETY EQUIPMENT , Rough-in not included									
1000	Eye wash fountain									
1400	Plastic bowl, pedestal mounted	Q-1	4	4	Ea.	269	207		476	610
1600	Unmounted		4	4		240	207		447	580
1800	Wall mounted		4	4		435	207		642	795
2000	Stainless steel, pedestal mounted		4	4		340	207		547	690
2200	Unmounted		4	4		266	207		473	605
2400	Wall mounted	↓	4	4	↓	282	207		489	625

22 45 Emergency Plumbing Fixtures

22 45 19 – Self-Contained Eyewash Equipment

22 45 19.10 Self-Contained Eyewash Safety Equipment				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SELF-CONTAINED EYEWASH SAFETY EQUIPMENT											
3000	Eye wash, portable, self-contained							Eo.	990		990	1,100

22 45 26 – Eye/Face Wash Equipment

22 45 26.10 Eye/Face Wash Safety Equipment												
0010	EYE/FACE WASH SAFETY EQUIPMENT , Rough-in not included											
4000	Eye and face wash, combination fountain											
4200	Stainless steel, pedestal mounted				Q-1	4	4	Eo.	1,050	207	1,257	1,475
4400	Unmounted					4	4		266	207	473	605
4600	Wall mounted				▼	4	4	▼	282	207	489	625

22 47 Drinking Fountains and Water Coolers

22 47 13 – Drinking Fountains

22 47 13.10 Drinking Water Fountains												
0010	DRINKING WATER FOUNTAINS , For connection to cold water supply R224000-40											
1000	Wall mounted, non-recessed											
1400	Bronze, with no back				1 Plum	4	2	Eo.	990	115	1,105	1,275
1800	Cast aluminum, enameled, for correctional institutions					4	2		1,625	115	1,740	1,975
2000	Fiberglass, 12" back, single bubbler unit					4	2		1,875	115	1,990	2,225
2040	Dual bubbler					3.20	2.500		2,100	144	2,244	2,550
2400	Precast stone, no back					4	2		950	115	1,065	1,225
2700	Stainless steel, single bubbler, no back					4	2		1,025	115	1,140	1,325
2740	With back					4	2		540	115	655	765
2780	Dual handle & wheelchair projection type				♿	4	2		730	115	845	980
2820	Dual level for handicapped type				♿	3.20	2.500		1,500	144	1,644	1,875
3300	Vitreous china											
3340	7" back				1 Plum	4	2	Eo.	610	115	725	845
3940	For vandal-resistant bottom plate, odd								73.50		73.50	81
3960	For freeze-proof valve system, odd				1 Plum	2	4		700	230	930	1,125
3980	For rough-in, supply and waste, odd				"	2.21	3.620	▼	365	208	573	715
4000	Wall mounted, semi-recessed											
4200	Poly-marble, single bubbler				1 Plum	4	2	Eo.	955	115	1,070	1,225
4600	Stainless steel, satin finish, single bubbler					4	2		1,125	115	1,240	1,425
4900	Vitreous china, single bubbler					4	2		880	115	995	1,150
5980	For rough-in, supply and waste, odd				▼	1.83	4.372	▼	365	252	617	780
6000	Wall mounted, fully recessed											
6400	Poly-marble, single bubbler				1 Plum	4	2	Eo.	1,600	115	1,715	1,925
6800	Stainless steel, single bubbler					4	2		1,525	115	1,640	1,850
7560	For freeze-proof valve system, odd					2	4		795	230	1,025	1,225
7580	For rough-in, supply and waste, odd					1.83	4.372		365	252	617	780
7600	Floor mounted, pedestal type											
7700	Aluminum, architectural style, C.I. base				1 Plum	2	4	Eo.	2,250	230	2,480	2,825
7780	Wheelchair handicap unit				♿	2	4		1,625	230	1,855	2,125
8400	Stainless steel, architectural style					2	4		1,750	230	1,980	2,275
8600	Enameled iron, heavy duty service, 2 bubblers					2	4		2,575	230	2,805	3,200
8660	4 bubblers					2	4		3,950	230	4,180	4,675
8880	For freeze-proof valve system, odd					2	4		665	230	895	1,075
8900	For rough-in, supply and waste, odd					1.83	4.372		365	252	617	780
9100	Deck mounted											
9500	Stainless steel, circular receptor				1 Plum	4	2	Eo.	415	115	530	630
9760	White enameled steel, 14" x 9" receptor				▼	4	2	▼	360	115	475	570

22 47 Drinking Fountains and Water Coolers

22 47 13 – Drinking Fountains

22 47 13.10 Drinking Water Fountains		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
9860	White enameled cast iron, 24" x 16" receptor	1 Plum	3	2.667	Eq.	445	153		598	720
9980	For rough-in, supply and waste, odd	▼	1.83	4.372	▼	365	252		617	780

22 47 16 – Pressure Water Coolers

22 47 16.10 Electric Water Coolers

0010	ELECTRIC WATER COOLERS	R224000-50								
0100	Wall mounted, non-recessed									
0140	4 GPH	Q-1	4	4	Eq.	680	207		887	1,075
0160	8 GPH, barrier free, sensor operated		4	4		1,025	207		1,232	1,475
0180	8.2 GPH		4	4		725	207		932	1,100
0600	8 GPH hot and cold water	▼	4	4		1,050	207		1,257	1,500
0640	For stainless steel cabinet, odd					84			84	92
1000	Dual height, 8.2 GPH	Q-1	3.80	4.211		2,025	218		2,243	2,550
1040	14.3 GPH	"	3.80	4.211		975	218		1,193	1,400
1240	For stainless steel cabinet, odd					171			171	188
2600	Wheelchair type, 8 GPH	Q-1	4	4		915	207		1,122	1,325
3300	Semi-recessed, 8.1 GPH		4	4		715	207		922	1,100
3320	12 GPH	▼	4	4	▼	820	207		1,027	1,225
4600	Floor mounted, flush-to-wall									
4640	4 GPH	1 Plum	3	2.667	Eq.	705	153		858	1,000
4680	8.2 GPH		3	2.667		740	153		893	1,050
4720	14.3 GPH		3	2.667		850	153		1,003	1,175
4960	14 GPH hot and cold water	▼	3	2.667		1,100	153		1,253	1,450
4980	For stainless steel cabinet, odd					128			128	141
5000	Dual height, 8.2 GPH	1 Plum	2	4		1,100	230		1,330	1,575
5040	14.3 GPH	"	2	4		1,150	230		1,380	1,625
5120	For stainless steel cabinet, odd					186			186	205
9800	For supply, waste & vent, all coolers	1 Plum	2.21	3.620	▼	365	208		573	715

22 51 Swimming Pool Plumbing Systems

22 51 19 – Swimming Pool Water Treatment Equipment

22 51 19.50 Swimming Pool Filtration Equipment

0010	SWIMMING POOL FILTRATION EQUIPMENT									
0900	Filter system, sand or diatomite type, incl. pump, 6,000 gal./hr.	2 Plum	1.80	8.889	Total	1,925	510		2,435	2,900
1020	Add for chlorination system, 800 S.F. pool		3	5.333	Eq.	177	305		482	660
1040	5,000 S.F. pool	▼	3	5.333	"	1,875	305		2,180	2,550

22 52 Fountain Plumbing Systems

22 52 16 – Fountain Pumps

22 52 16.10 Fountain Water Pumps

0010	FOUNTAIN WATER PUMPS									
0100	Pump w/controls									
0200	Single phase, 100' cord, 1/2 H.P. pump	2 Skwk	4.40	3.636	Eq.	1,275	172		1,447	1,675
0300	3/4 H.P. pump		4.30	3.721		2,175	176		2,351	2,675
0400	1 H.P. pump		4.20	3.810		2,350	180		2,530	2,875
0500	1-1/2 H.P. pump		4.10	3.902		2,800	185		2,985	3,350
0600	2 H.P. pump		4	4		3,775	189		3,964	4,475
0700	Three phase, 200' cord, 5 H.P. pump		3.90	4.103		5,175	194		5,369	6,000
0800	7-1/2 H.P. pump		3.80	4.211		9,000	199		9,199	10,200
0900	10 H.P. pump		3.70	4.324		13,300	205		13,505	15,000

22 52 Fountain Plumbing Systems

22 52 16 – Fountain Pumps

22 52 16.10 Fountain Water Pumps

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor Equipment	Total	Total Incl O&P
1000	15 H.P. pump	2 Skwk	3.60	4.444	Ea.	16,800	210	17,010	18,800
2000	DESIGN NOTE: Use two horsepower per surface acre.								

22 52 33 – Fountain Ancillary

22 52 33.10 Fountain Miscellaneous

0010	FOUNTAIN MISCELLANEOUS								
1100	Nozzles, minimum	2 Skwk	8	2	Ea.	149	94.50	243.50	310
1200	Maximum		8	2		320	94.50	414.50	495
1300	Lights w/maunting kits, 200 watt		18	.889		1,050	42	1,092	1,225
1400	300 watt		18	.889		1,275	42	1,317	1,475
1500	500 watt		18	.889		1,425	42	1,467	1,650
1600	Color blender	▼	12	1.333	▼	555	63	618	710

22 66 Chemical-Waste Systems for Lab. and Healthcare Facilities

22 66 53 – Laboratory Chemical-Waste and Vent Piping

22 66 53.30 Glass Pipe

0010	GLASS PIPE, Barasilicate, couplings & clevis hanger assemblies, 10' O.C.								
0020	Drainage								
1100	1-1/2" diameter	Q-1	52	.308	L.F.	10.60	15.95	26.55	35.50
1120	2" diameter		44	.364		13.85	18.85	32.70	44
1140	3" diameter		39	.410		18.70	21.50	40.20	52.50
1160	4" diameter		30	.533		33.50	27.50	61	78
1180	6" diameter	▼	26	.615	▼	58	32	90	112

22 66 53.60 Corrosion Resistant Pipe

0010	CORROSION RESISTANT PIPE, No couplings or hangers								
0020	Iron alloy, drain, mechanical joint								
1000	1-1/2" diameter	Q-1	70	.229	L.F.	46	11.85	57.85	68.50
1100	2" diameter		66	.242		47	12.55	59.55	70.50
1120	3" diameter		60	.267		60.50	13.80	74.30	87.50
1140	4" diameter	▼	52	.308	▼	77.50	15.95	93.45	110
2980	Plastic, epoxy, fiberglass filament wound, B&S joint								
3000	2" diameter	Q-1	62	.258	L.F.	12	13.35	25.35	33
3100	3" diameter		51	.314		14	16.25	30.25	40
3120	4" diameter		45	.356		20	18.40	38.40	50
3140	6" diameter		32	.500		28	26	54	70
3980	Polyester, fiberglass filament wound, B&S joint								
4000	2" diameter	Q-1	62	.258	L.F.	13.05	13.35	26.40	34.50
4100	3" diameter		51	.314		17	16.25	33.25	43
4120	4" diameter		45	.356		25	18.40	43.40	55.50
4140	6" diameter	▼	32	.500	▼	36	26	62	78.50
4980	Polypropylene, acid resistant, fire retardant, schedule 40								
5000	1-1/2" diameter	Q-1	68	.235	L.F.	7.90	12.20	20.10	27
5100	2" diameter		62	.258		12.45	13.35	25.80	33.50
5120	3" diameter		51	.314		22	16.25	38.25	49
5140	4" diameter	▼	45	.356	▼	28	18.40	46.40	59
5980	Proxylene, fire retardant, Schedule 40								
6000	1-1/2" diameter	Q-1	68	.235	L.F.	12.40	12.20	24.60	32
6100	2" diameter		62	.258		17	13.35	30.35	38.50
6120	3" diameter		51	.314		30.50	16.25	46.75	58.50
6140	4" diameter		45	.356		43.50	18.40	61.90	75.50

Estimating Tips

The labor adjustment factors listed in Subdivision 22 01 02.20 also apply to Division 23.

23 10 00 Facility Fuel Systems

- The prices in this subdivision for above- and below-ground storage tanks do not include foundations or hold-down slabs, unless noted. The estimator should refer to Divisions 3 and 31 for foundation system pricing. In addition to the foundations, required tank accessories, such as tank gauges, leak detection devices, and additional manholes and piping, must be added to the tank prices.

23 50 00 Central Heating Equipment

- When estimating the cost of an HVAC system, check to see who is responsible for providing and installing the temperature control system. It is possible to overlook controls, assuming that they would be included in the electrical estimate.
- When looking up a boiler, be careful on specified capacity. Some manufacturers rate their products on output while others use input.
- Include HVAC insulation for pipe, boiler, and duct (wrap and liner).
- Be careful when looking up mechanical items to get the correct pressure rating and connection type (thread, weld, flange).

23 70 00 Central HVAC Equipment

- Combination heating and cooling units are sized by the air conditioning requirements. (See Reference No. R236000-20 for preliminary sizing guide.)
- A ton of air conditioning is nominally 400 CFM.
- Rectangular duct is taken off by the linear foot for each size, but its cost is usually estimated by the pound. Remember that SMACNA standards now base duct on internal pressure.
- Prefabricated duct is estimated and purchased like pipe: straight sections and fittings.
- Note that cranes or other lifting equipment are not included on any lines in Division 23. For example, if a crane is required to lift a heavy piece of pipe into place high above a gym floor, or to put a rooftop unit on the roof of a four-story building, etc., it must be added. Due to the potential for extreme variation—from nothing additional required to a major crane or helicopter—we feel that including a nominal amount for “lifting contingency” would be useless and detract from the accuracy of the estimate. When using equipment rental cost data from RSMeans, do not forget to include the cost of the operator(s).

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 23.

23 05 Common Work Results for HVAC

23 05 02 – HVAC General

23 05 02.10 Air Conditioning, General

0010	AIR CONDITIONING, GENERAL Prices are for standard efficiencies (SEER 13)								
0020	for upgrade to SEER 14 add					10%			

23 05 05 – Selective HVAC Demolition

23 05 05.10 HVAC Demolition

0010	HVAC DEMOLITION								
0100	Air conditioner, split unit, 3 ton	Q-5	2	8	Ea.		420	420	635
0150	Package unit, 3 ton	Q-6	3	8	"		435	435	660
0298	Bailers								
0300	Electric, up thru 148 kW	Q-19	2	12	Ea.		635	635	955
0310	150 thru 518 kW	"	1	24			1,275	1,275	1,900
0320	550 thru 2000 kW	Q-21	.40	80			4,350	4,350	6,550
0330	2070 kW and up	"	.30	106			5,800	5,800	8,725
0340	Gas and/or oil, up thru 150 MBH	Q-7	2.20	14.545			810	810	1,225
0350	160 thru 2000 MBH		.80	40			2,225	2,225	3,375
0360	2100 thru 4500 MBH		.50	64			3,575	3,575	5,375
0370	4600 thru 7000 MBH		.30	106			5,950	5,950	8,975
0380	7100 thru 12,000 MBH		.16	200			11,100	11,100	16,800
0390	12,200 thru 25,000 MBH	▼	.12	266	▼		14,900	14,900	22,400
1000	Ductwork, 4" high, 8" wide	1 Clab	200	.040	L.F.		1.47	1.47	2.26
1100	6" high, 8" wide		165	.048			1.78	1.78	2.74
1200	10" high, 12" wide		125	.064			2.35	2.35	3.62
1300	12"-14" high, 16"-18" wide		85	.094			3.45	3.45	5.30
1400	18" high, 24" wide		67	.119			4.38	4.38	6.75
1500	30" high, 36" wide		56	.143			5.25	5.25	8.10
1540	72" wide	▼	50	.160	▼		5.85	5.85	9.05
3000	Mechanical equipment, light items. Unit is weight, not cooling.	Q-5	.90	17.778	Ton		935	935	1,425
3600	Heavy items	"	1.10	14.545	"		765	765	1,150
3700	Deduct for salvage (when applicable), minimum				Jab			73	80
3710	Maximum				"			455	500
5090	Remove refrigerant from system	1 Stpi	40	.200	Lb.		11.70	11.70	17.65

23 05 23 – General-Duty Valves for HVAC Piping

23 05 23.30 Valves, Iron Body

0010	VALVES, IRON BODY								
1020	Butterfly, wafer type, gear actuator, 200 lb.								
1030	2"	1 Plum	14	.571	Ea.		96	33	155
1040	2-1/2"	Q-1	9	1.778			97.50	92	246
1050	3"		8	2			101	104	267
1060	4"	▼	5	3.200			113	166	375
1070	5"	Q-2	5	4.800			126	258	530
1080	6"	"	5	4.800	▼		143	258	550
1650	Gate, 125 lb., N.R.S.								
2150	Flanged								
2200	2"	1 Plum	5	1.600	Ea.		680	92	890
2240	2-1/2"	Q-1	5	3.200			700	166	1,025
2260	3"		4.50	3.556			780	184	1,150
2280	4"	▼	3	5.333			1,125	276	1,401
2300	6"	Q-2	3	8	▼		1,900	430	2,330
3550	OS&Y, 125 lb., flanged								
3600	2"	1 Plum	5	1.600	Ea.		455	92	640
3660	3"	Q-1	4.50	3.556			495	184	825
3680	4"	"	3	5.333			730	276	1,006
3700	6"	Q-2	3	8			1,175	430	1,605

23 05 Common Work Results for HVAC

23 05 23 – General-Duty Valves for HVAC Piping

23 05 23.30 Valves, Iron Body		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
3900	For 175 lb., flanged, odd					200%	10%			
5450	Swing check, 125 lb., threaded									
5470	1"	1 Plum	13	.615	Eo.	635	35.50		670.50	755
5500	2"	"	11	.727		410	42		452	515
5540	2-1/2"	Q-1	15	1.067		525	55.50		580.50	665
5550	3"		13	1.231		570	64		634	720
5560	4"		10	1.600		905	83		988	1,125
5950	Flanged									
6000	2"	1 Plum	5	1.600	Eo.	395	92		487	575
6040	2-1/2"	Q-1	5	3.200		365	166		531	650
6050	3"		4.50	3.556		390	184		574	705
6060	4"	▼	3	5.333		610	276		886	1,075
6070	6"	Q-2	3	8		1,050	430		1,480	1,800

23 05 23.80 Valves, Steel

0010	VALVES, STEEL									
0800	Cost									
1350	Check volve, swing type, 150 lb., flanged									
1370	1"	1 Plum	10	.800	Eo.	390	46		436	500
1400	2"	"	8	1		705	57.50		762.50	860
1440	2-1/2"	Q-1	5	3.200		820	166		986	1,150
1450	3"		4.50	3.556		835	184		1,019	1,200
1460	4"	▼	3	5.333		1,200	276		1,476	1,750
1540	For 300 lb., flanged, odd					50%	15%			
1548	For 600 lb., flanged, odd					110%	20%			
1950	Gote volve, 150 lb., flanged									
2000	2"	1 Plum	8	1	Eo.	760	57.50		817.50	920
2040	2-1/2"	Q-1	5	3.200		1,075	166		1,241	1,425
2050	3"		4.50	3.556		1,075	184		1,259	1,450
2060	4"	▼	3	5.333		1,325	276		1,601	1,900
2070	6"	Q-2	3	8	▼	2,075	430		2,505	2,925
3650	Globe volve, 150 lb., flanged									
3700	2"	1 Plum	8	1	Eo.	955	57.50		1,012.50	1,125
3740	2-1/2"	Q-1	5	3.200		1,200	166		1,366	1,575
3750	3"		4.50	3.556		1,200	184		1,384	1,600
3760	4"	▼	3	5.333		1,775	276		2,051	2,375
3770	6"	Q-2	3	8	▼	2,775	430		3,205	3,700
5150	Farged									
5650	Check volve, class 800, horizontal, sacket									
5698	Threaded									
5700	1/4"	1 Plum	24	.333	Eo.	94.50	19.20		113.70	133
5720	3/8"		24	.333		94.50	19.20		113.70	133
5730	1/2"		24	.333		94.50	19.20		113.70	133
5740	3/4"		20	.400		101	23		124	146
5750	1"		19	.421		119	24		143	168
5760	1-1/4"	▼	15	.533	▼	233	30.50		263.50	305

23 05 93 – Testing, Adjusting, and Balancing for HVAC

23 05 93.10 Balancing, Air

0010	BALANCING, AIR (Subcontractor's quote incl. material and labor)									
0900	Heating and ventilating equipment									
1000	Centrifugal fons, utility sets				Eo.				365	400
1100	Heating and ventiloting unit								545	600
1200	In-line fon				▼				530	585

23 05 Common Work Results for HVAC

23 05 93 – Testing, Adjusting, and Balancing for HVAC

		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
23 05 93.10 Balancing, Air							Labor	Equipment		
1300	Propeller and wall fan				Ea.				103	114
1400	Roof exhaust fan								243	267
2000	Air conditioning equipment, central station								790	870
2100	Built-up low pressure unit								730	800
2200	Built-up high pressure unit								850	935
2500	Multi-zone A.C. and heating unit								545	600
2600	For each zone over one, add								122	134
2700	Package A.C. unit								305	335
2800	Rooftop heating and cooling unit								425	470
3000	Supply, return, exhaust, registers & diffusers, avg. height ceiling								73	80
3100	High ceiling								109	120
3200	Floor height								61	67

23 05 93.20 Balancing, Water

0010	BALANCING, WATER (Subcontractor's quote incl. material and labor)									
0050	Air cooled condenser				Ea.				225	247
0080	Boiler								455	500
0100	Cabinet unit heater								77	85
0200	Chiller								545	600
0300	Convactor								64.50	70.50
0500	Cooling tower								420	460
0600	Fan coil unit, unit ventilator								116	127
0700	Fin tube and radiant panels								129	141
0800	Main and duct re-heat coils								119	131
0810	Heat exchanger								119	131
1000	Pumps								283	310
1100	Unit heater								90	99

23 07 HVAC Insulation

23 07 13 – Duct Insulation

23 07 13.10 Duct Thermal Insulation

0010	DUCT THERMAL INSULATION									
0100	Rule of thumb, as a percentage of total mechanical costs					Job			10%	10%
0110	Insulation req'd. is based on the surface size/area to be covered									
3000	Ductwork									
3020	Blanket type, fiberglass, flexible									
3140	FSK vapor barrier wrap, .75 lb. density									
3160	1" thick	G	Q-14	350	.046	S.F.	.19	2.10	2.29	3.48
3170	1-1/2" thick	G		320	.050		.23	2.30	2.53	3.83
3180	2" thick	G		300	.053		.27	2.45	2.72	4.12
3190	3" thick	G		260	.062		.38	2.83	3.21	4.83
3200	4" thick	G		242	.066		.64	3.04	3.68	5.45
3210	Vinyl jacket, same as FSK									
3280	Unfaced, 1 lb. density									
3310	1" thick	G	Q-14	360	.044	S.F.	.20	2.05	2.25	3.40
3320	1-1/2" thick	G		330	.048		.25	2.23	2.48	3.75
3330	2" thick	G		310	.052		.33	2.38	2.71	4.06
3400	FSK facing, 1 lb. density									
3420	1-1/2" thick	G	Q-14	310	.052	S.F.	.31	2.38	2.69	4.04
3430	2" thick	G	"	300	.053	"	.37	2.45	2.82	4.23
3450	FSK facing, 1.5 lb. density									
3470	1-1/2" thick	G	Q-14	300	.053	S.F.	.38	2.45	2.83	4.24

23 07 HVAC Insulation

23 07 13 – Duct Insulation

23 07 13.10 Duct Thermal Insulation				Daily	Labar-			2014 Bare Casts		Total	Total
				Crew	Output	Hours	Unit	Material	Labar	Equipment	Incl O&P
3480	2" thick	G	Q-14	290	.055	S.F.		.46	2.54		4.46
3795	Finishes										
3800	Stainless steel waven mesh		Q-14	100	.160	S.F.		.74	7.35	8.09	12.25
3810	For .010" stainless steel, odd			160	.100			2.88	4.60	7.48	10.30
3820	18 oz. fibergloss cloth, posted an			170	.094			.67	4.33	5	7.50
3900	8 oz. convos, pasted on			180	.089			.21	4.09	4.30	6.60
3940	For .016" aluminum jacket, odd			200	.080			.92	3.68	4.60	6.75
7878	Contact cement, quot con					Ea.		10.50		10.50	11.55

23 07 16 – HVAC Equipment Insulation

23 07 16.10 HVAC Equipment Thermal Insulation

0010	HVAC EQUIPMENT THERMAL INSULATION										
0100	Rule of thumb, as a percentage of total mechanical casts					Job				10%	10%
0110	Insulation req'd. is based on the surface size/oreo to be covered										
1000	Bailer, 1-1/2" colcium silicate only	G	Q-14	110	.145	S.F.		3.77	6.70	10.47	14.55
1020	Plus 2" fibergloss	G	"	80	.200	"		4.74	9.20	13.94	19.55
2000	Breeching, 2" colcium silicate										
2020	Rectangular	G	Q-14	42	.381	S.F.		7.40	17.55	24.95	35.50
2040	Round	G	"	38.70	.413	"		7.70	19.05	26.75	38

23 09 Instrumentation and Control for HVAC

23 09 33 – Electric and Electronic Control System for HVAC

23 09 33.10 Electronic Control Systems

0010	ELECTRONIC CONTROL SYSTEMS										
0020	Far electronic casts, add to Section 23 09 43.10					Ea.				15%	15%

23 09 43 – Pneumatic Control System for HVAC

23 09 43.10 Pneumatic Control Systems

0010	PNEUMATIC CONTROL SYSTEMS										
0011	Including a nominal 50 ft. of tubing. Add control panelboard if req'd.										
0100	Heating and ventiloting, split system										
0200	Mixed air control, ecanomizer cycle, ponel readout, tubing										
0220	Up to 10 tons	G	Q-19	.68	35.294	Ea.		4,075	1,875	5,950	7,275
0240	Far 10 to 20 tons	G		.63	37.915			4,350	2,000	6,350	7,825
0260	Far over 20 tons	G	▼	.58	41.096	▼		4,725	2,175	6,900	8,475
0300	Heating coil, hot water, 3 way valve,										
0320	Freezestat, limit control on discharge, readout		Q-5	.69	23.088	Ea.		3,025	1,225	4,250	5,150
0500	Caoling coil, chilled water, room										
0520	Thermostat, 3 way valve		Q-5	2	8	Ea.		1,350	420	1,770	2,100
0600	Caoling tower, fon cycle, damper control,										
0620	Control system including water readout in/out at panel		Q-19	.67	35.821	Ea.		5,350	1,900	7,250	8,750
1000	Unit ventilotor, doy/night operation,										
1100	freezestat, ASHRAE, cycle 2		Q-19	.91	26.374	Ea.		2,975	1,400	4,375	5,350
2000	Compensoted hot water fram bailer, volve control,										
2100	readout ond reset ot panel, up to 60 GPM		Q-19	.55	43.956	Ea.		5,550	2,325	7,875	9,600
2120	Far 120 GPM			.51	47.059			5,925	2,500	8,425	10,300
2140	Far 240 GPM			.49	49.180			6,200	2,600	8,800	10,800
3000	Bailer room combustion air, domper to 5 S.F., controls			1.37	17.582			2,675	930	3,605	4,350
3500	Fon coil, heating ond cooling valves, 4 pipe control system			3	8			1,200	425	1,625	1,950
3600	Heat exchanger system controls		▼	.86	27.907			2,600	1,475	4,075	5,075
4000	Pneumatic thermostat, including controlling room radiotar volve		Q-5	2.43	6.593			805	345	1,150	1,400
4060	Pump control system		Q-19	3	8	▼		1,225	425	1,650	1,975

23 09 Instrumentation and Control for HVAC

23 09 43 – Pneumatic Control System for HVAC

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
23 09 43.10	Pneumatic Control Systems									
4500	Air supply for pneumatic control system									
4600	Tank mounted duplex compressor, starter, alternator,									
4620	piping, dryer, PRV station and filter									
4630	1/2 HP	Q-19	.68	35.139	Ea.	9,950	1,850		11,800	13,700
4660	1-1/2 HP		.58	41.739		12,100	2,200		14,300	16,700
4690	5 HP	▼	.42	57.143	▼	28,900	3,025		31,925	36,400

23 13 Facility Fuel-Storage Tanks

23 13 13 – Facility Underground Fuel-Oil, Storage Tanks

23 13 13.09 Single-Wall Steel Fuel-Oil Tanks

0010	SINGLE-WALL STEEL FUEL-OIL TANKS									
5000	Tanks, steel ugend., stip3, not incl. hold-down bars									
5500	Excavation, pad, pumps and piping not included									
5510	Single wall, 500 gallon capacity, 7 ga. shell	Q-5	2.70	5.926	Ea.	2,050	310		2,360	2,725
5520	1,000 gallon capacity, 7 ga. shell	"	2.50	6.400		3,825	335		4,160	4,700
5530	2,000 gallon capacity, 1/4" thick shell	Q-7	4.60	6.957		6,200	385		6,585	7,400
5535	2,500 gallon capacity, 7 ga. shell	Q-5	3	5.333		6,850	281		7,131	7,950
5540	5,000 gallon capacity, 1/4" thick shell	Q-7	3.20	10		11,500	555		12,055	13,500
5580	15,000 gallon capacity, 5/16" thick shell		1.70	18.824		19,000	1,050		20,050	22,500
5600	20,000 gallon capacity, 5/16" thick shell		1.50	21.333		36,300	1,200		37,500	41,800
5610	25,000 gallon capacity, 3/8" thick shell		1.30	24.615		37,900	1,375		39,275	43,800
5620	30,000 gallon capacity, 3/8" thick shell		1.10	29.091		38,400	1,625		40,025	44,700
5630	40,000 gallon capacity, 3/8" thick shell		.90	35.556		42,000	1,975		43,975	49,200
5640	50,000 gallon capacity, 3/8" thick shell	▼	.80	40	▼	46,600	2,225		48,825	55,000

23 13 13.23 Glass-Fiber-Reinforced-Plastic, Fuel-Oil, Storage

0010	GLASS-FIBER-REINFORCED-PLASTIC, UNDERGRND. FUEL-OIL, STORAGE									
0210	Fiberglass, underground, single wall, U.L. listed, not including									
0220	manway or hold-down strap									
0240	2,000 gallon capacity	Q-7	4.57	7.002	Ea.	5,675	390		6,065	6,825
0245	3,000 gallon capacity		3.90	8.205		6,800	455		7,255	8,175
0250	4,000 gallon capacity		3.55	9.014		7,875	500		8,375	9,425
0255	5,000 gallon capacity		3.20	10		8,750	555		9,305	10,500
0260	6,000 gallon capacity		2.67	11.985		8,950	670		9,620	10,900
0280	10,000 gallon capacity		2	16		12,200	890		13,090	14,800
0284	15,000 gallon capacity		1.68	19.048		19,500	1,050		20,550	23,000
0290	20,000 gallon capacity		1.45	22.069		25,100	1,225		26,325	29,500
0500	For manway, fittings and hold-downs, add					20%	15%			
1020	Fiberglass, underground, double wall, U.L. listed									
1030	includes manways, not incl. hold-down straps									
1040	600 gallon capacity	Q-5	2.42	6.612	Ea.	6,850	350		7,200	8,050
1050	1,000 gallon capacity	"	2.25	7.111		9,350	375		9,725	10,900
1060	2,500 gallon capacity	Q-7	4.16	7.692		14,100	430		14,530	16,100
1070	3,000 gallon capacity		3.90	8.205		15,300	455		15,755	17,500
1080	4,000 gallon capacity		3.64	8.791		15,500	490		15,990	17,700
1090	6,000 gallon capacity		2.42	13.223		20,100	735		20,835	23,300
1100	8,000 gallon capacity		2.08	15.385		22,400	855		23,255	26,000
1110	10,000 gallon capacity		1.82	17.582		26,000	980		26,980	30,100
1120	12,000 gallon capacity	▼	1.70	18.824	▼	32,400	1,050		33,450	37,300
2210	Fiberglass, underground, single wall, U.L. listed, including									
2220	hold-down straps, no manways									
2240	2,000 gallon capacity	Q-7	3.55	9.014	Ea.	6,100	500		6,600	7,450

23 13 Facility Fuel-Storage Tanks

23 13 13 – Facility Underground Fuel-Oil, Storage Tanks

23 13 13.23 Glass-Fiber-Reinfcd-Plastic, Fuel-Oil, Storage		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
2250	4,000 gallon capacity	Q-7	2.90	11.034	Ea.	8,300	615		8,915	10,100
2260	6,000 gallon capacity		2	16		9,800	890		10,690	12,200
2280	10,000 gallon capacity		1.60	20		13,100	1,125		14,225	16,100
2284	15,000 gallon capacity		1.39	23.022		20,300	1,275		21,575	24,300
2290	20,000 gallon capacity	▼	1.14	28.070	▼	26,400	1,575		27,975	31,400
3020	Fiberglass, underground, double wall, U.L. listed									
3030	includes manways and hold-down straps									
3040	600 gallon capacity	Q-5	1.86	8.602	Ea.	7,275	455		7,730	8,675
3050	1,000 gallon capacity	"	1.70	9.412		9,775	495		10,270	11,600
3060	2,500 gallon capacity	Q-7	3.29	9.726		14,500	540		15,040	16,700
3070	3,000 gallon capacity		3.13	10.224		15,700	570		16,270	18,100
3080	4,000 gallon capacity		2.93	10.922		15,900	610		16,510	18,400
3090	6,000 gallon capacity		1.86	17.204		21,000	960		21,960	24,600
3100	8,000 gallon capacity		1.65	19.394		23,300	1,075		24,375	27,200
3110	10,000 gallon capacity		1.48	21.622		26,800	1,200		28,000	31,300
3120	12,000 gallon capacity		1.40	22.857		33,300	1,275		34,575	38,500

23 13 23 – Facility Aboveground Fuel-Oil, Storage Tanks

23 13 23.13 Vertical, Steel, Abvground Fuel-Oil, Stor. Tanks

0010	VERTICAL, STEEL, ABOVEGROUND FUEL-OIL, STORAGE TANKS									
4000	Fixed roof oil storage tanks, steel, (1 BBL=42 gal. w/foundation 3'D x 1'W)									
4200	5,000 barrels				Ea.				194,000	213,500
4300	24,000 barrels								333,500	367,000
4500	56,000 barrels								729,000	802,000
4600	110,000 barrels								1,060,000	1,166,000
4800	143,000 barrels								1,250,000	1,375,000
4900	225,000 barrels								1,360,000	1,496,000
5100	Floating roof gasoline tanks, steel, 5,000 barrels (w/foundation 3'D x 1'W)									
5200	25,000 barrels								204,000	225,000
5400	55,000 barrels								381,000	419,000
5400	55,000 barrels								839,000	923,000
5500	100,000 barrels								1,253,000	1,379,000
5700	150,000 barrels								1,532,000	1,685,000
5800	225,000 barrels				▼				2,300,000	2,783,000

23 13 23.16 Horizontal, Stl, Abvgrd Fuel-Oil, Storage Tanks

0010	HORIZONTAL, STEEL, ABOVEGROUND FUEL-OIL, STORAGE TANKS									
3000	Steel, storage, above ground, including cradles, coating,									
3020	fittings, not including foundation, pumps or piping									
3040	Single wall, 275 gallon	Q-5	5	3.200	Ea.	490	168		658	795
3060	550 gallon	"	2.70	5.926		3,400	310		3,710	4,225
3080	1,000 gallon	Q-7	5	6.400		5,600	355		5,955	6,700
3100	1,500 gallon		4.75	6.737		7,975	375		8,350	9,350
3120	2,000 gallon		4.60	6.957		9,675	385		10,060	11,200
3140	5,000 gallon		3.20	10		19,100	555		19,655	21,800
3150	10,000 gallon		2	16		31,900	890		32,790	36,500
3160	15,000 gallon		1.70	18.824		41,000	1,050		42,050	46,700
3170	20,000 gallon		1.45	22.069		53,000	1,225		54,225	60,500
3180	25,000 gallon		1.30	24.615		62,000	1,375		63,375	70,000
3190	30,000 gallon	▼	1.10	29.091		74,000	1,625		75,625	84,000
3320	Double wall, 500 gallon capacity	Q-5	2.40	6.667		2,625	350		2,975	3,400
3330	2000 gallon capacity	Q-7	4.15	7.711		9,975	430		10,405	11,700
3340	4000 gallon capacity		3.60	8.889		17,800	495		18,295	20,400
3350	6000 gallon capacity		2.40	13.333		21,000	745		21,745	24,200
3360	8000 gallon capacity		2	16		27,000	890		27,890	31,100

23 13 Facility Fuel-Storage Tanks

23 13 23 – Facility Aboveground Fuel-Oil, Storage Tanks

23 13 23.16 Horizontal, Stl, Abvgrd Fuel-Oil, Storage Tanks		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3370	10000 gallon capacity	Q-7	1.80	17.778	Ea.	30,200	990		31,190	34,700
3380	15000 gallon capacity		1.50	21.333		45,900	1,200		47,100	52,500
3390	20000 gallon capacity		1.30	24.615		52,500	1,375		53,875	59,500
3400	25000 gallon capacity		1.15	27.826		63,500	1,550		65,050	72,500
3410	30000 gallon capacity		1	32		69,500	1,775		71,275	79,000

23 13 23.26 Horizontal, Conc., Abvgrd Fuel-Oil, Stor. Tanks

0010 HORIZONTAL, CONCRETE, ABOVEGROUND FUEL-OIL, STORAGE TANKS										
0050	Concrete, storage, above ground, including pad & pump									
0100	500 gallon	F-3	2	20	Ea.	10,000	935	330	11,265	12,800
0200	1,000 gallon	"	2	20		14,000	935	330	15,265	17,200
0300	2,000 gallon	F-4	2	24		18,000	1,100	570	19,670	22,100
0400	4,000 gallon		2	24		23,000	1,100	570	24,670	27,600
0500	8,000 gallon		2	24		36,000	1,100	570	37,670	41,900
0600	12,000 gallon		2	24		48,000	1,100	570	49,670	55,500

23 21 Hydronic Piping and Pumps

23 21 20 – Hydronic HVAC Piping Specialties

23 21 20.10 Air Control

0010 AIR CONTROL										
0030	Air separator, with strainer									
0040	2" diameter	Q-5	6	2.667	Ea.	1,175	140		1,315	1,500
0080	2-1/2" diameter		5	3.200		1,325	168		1,493	1,700
0100	3" diameter		4	4		2,050	211		2,261	2,575
0120	4" diameter		3	5.333		2,950	281		3,231	3,650
0130	5" diameter	Q-6	3.60	6.667		3,750	365		4,115	4,675
0140	6" diameter	"	3.40	7.059		4,500	385		4,885	5,525

23 21 20.18 Automatic Air Vent

0010 AUTOMATIC AIR VENT										
0020	Cast iron body, stainless steel internals, float type									
0060	1/2" NPT inlet, 300 psi	1 Stpi	12	.667	Ea.	107	39		146	177
0220	3/4" NPT inlet, 250 psi	"	10	.800		335	47		382	440
0340	1-1/2" NPT inlet, 250 psi	Q-5	12	1.333		1,050	70		1,120	1,250

23 21 20.42 Expansion Joints

0010 EXPANSION JOINTS										
0100	Bellows type, neoprene cover, flanged spool									
0140	6" face to face, 1-1/4" diameter	1 Stpi	11	.727	Ea.	255	42.50		297.50	345
0160	1-1/2" diameter	"	10.60	.755		255	44		299	350
0180	2" diameter	Q-5	13.30	1.203		258	63.50		321.50	380
0190	2-1/2" diameter		12.40	1.290		267	68		335	395
0200	3" diameter		11.40	1.404		299	74		373	440
0480	10" face to face, 2" diameter		13	1.231		370	65		435	510
0500	2-1/2" diameter		12	1.333		390	70		460	535
0520	3" diameter		11	1.455		400	76.50		476.50	555
0540	4" diameter		8	2		455	105		560	660
0560	5" diameter		7	2.286		540	120		660	775
0580	6" diameter		6	2.667		560	140		700	825

23 21 20.46 Expansion Tanks

0010 EXPANSION TANKS										
1507	Underground fuel-oil storage tanks, see Section 23 13 13									
1512	Tank leak detection systems, see Section 28 33 33.50									

23 21 Hydronic Piping and Pumps

23 21 20 – Hydronic HVAC Piping Specialties

23 21 20.46 Expansion Tanks		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
2000	Steel, liquid expansion, ASME, painted, 15 gallon capacity	Q-5	17	.941	Ea.	640	49.50		689.50	775
2020	24 gallon capacity		14	1.143		715	60		775	875
2040	30 gallon capacity		12	1.333		715	70		785	890
2060	40 gallon capacity		10	1.600		835	84		919	1,050
2080	60 gallon capacity		8	2		1,000	105		1,105	1,250
2100	80 gallon capacity		7	2.286		1,075	120		1,195	1,350
2120	100 gallon capacity		6	2.667		1,450	140		1,590	1,800
3000	Steel ASME expansion, rubber diaphragm, 19 gal. cap. accept.		12	1.333		2,425	70		2,495	2,775
3020	31 gallon capacity		8	2		2,700	105		2,805	3,125
3040	61 gallon capacity		6	2.667		3,800	140		3,940	4,375
3080	119 gallon capacity		4	4		4,100	211		4,311	4,825
3100	158 gallon capacity		3.80	4.211		5,675	222		5,897	6,575
3140	317 gallon capacity		2.80	5.714		8,575	300		8,875	9,875
3180	528 gallon capacity		2.40	6.667		13,900	350		14,250	15,800

23 21 20.58 Hydronic Heating Control Valves

0010	HYDRONIC HEATING CONTROL VALVES									
0050	Hot water, nonelectric, thermostatic									
0100	Radiator supply, 1/2" diameter	1 Stpi	24	.333	Ea.	68.50	19.50		88	105
0120	3/4" diameter		20	.400		68.50	23.50		92	111
0140	1" diameter		19	.421		88	24.50		112.50	134
0160	1-1/4" diameter	↓	15	.533	↓	212	31		243	280
0500	For low pressure steam, add					25%				

23 21 20.70 Steam Traps

0010	STEAM TRAPS									
0030	Cast iron body, threaded									
0040	Inverted bucket									
0050	1/2" pipe size	1 Stpi	12	.667	Ea.	152	39		191	226
0070	3/4" pipe size		10	.800		266	47		313	365
0100	1" pipe size		9	.889		410	52		462	530
0120	1-1/4" pipe size	↓	8	1	↓	615	58.50		673.50	770
1000	Floater & thermostatic, 15 psi									
1010	3/4" pipe size	1 Stpi	16	.500	Ea.	124	29.50		153.50	181
1020	1" pipe size		15	.533		150	31		181	211
1040	1-1/2" pipe size		9	.889		263	52		315	370
1060	2" pipe size		6	1.333		485	78		563	650

23 21 20.76 Strainers, Y Type, Bronze Body

0010	STRAINERS, Y TYPE, BRONZE BODY									
0050	Screwed, 125 lb., 1/4" pipe size	1 Stpi	24	.333	Ea.	23	19.50		42.50	55
0070	3/8" pipe size		24	.333		27.50	19.50		47	60
0100	1/2" pipe size		20	.400		27.50	23.50		51	66
0140	1" pipe size		17	.471		40.50	27.50		68	86
0160	1-1/2" pipe size		14	.571		87.50	33.50		121	147
0180	2" pipe size		13	.615		116	36		152	183
0182	3" pipe size	↓	12	.667		845	39		884	990
0200	300 lb., 2-1/2" pipe size	Q-5	17	.941		510	49.50		559.50	635
0220	3" pipe size		16	1		1,000	52.50		1,052.50	1,175
0240	4" pipe size		15	1.067		2,300	56		2,356	2,600
0500	For 300 lb. rating 1/4" thru 2", add					15%				
1000	Flanged, 150 lb., 1-1/2" pipe size	1 Stpi	11	.727	Ea.	475	42.50		517.50	585
1020	2" pipe size	"	8	1		640	58.50		698.50	795
1030	2-1/2" pipe size	Q-5	5	3.200		950	168		1,118	1,300
1040	3" pipe size	↓	4.50	3.556	↓	1,175	187		1,362	1,550

23 21 Hydronic Piping and Pumps

23 21 20 – Hydronic HVAC Piping Specialties

23 21 20.76 Strainers, Y Type, Bronze Body		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1060	4" pipe size	Q-5	3	5.333	Ea.	1,775	281		2,056	2,375
1100	6" pipe size	Q-6	3	8		3,400	435		3,835	4,375
1106	8" pipe size	"	2.60	9.231	▼	3,725	505		4,230	4,850
1500	For 300 lb. rating, add					40%				

23 21 20.78 Strainers, Y Type, Iron Body

0010 STRAINERS, Y TYPE, IRON BODY										
0050	Screwed, 250 lb., 1/4" pipe size	1 Stpi	20	.400	Ea.	11.05	23.50		34.55	47.50
0070	3/8" pipe size		20	.400		11.05	23.50		34.55	47.50
0100	1/2" pipe size		20	.400		11.05	23.50		34.55	47.50
0140	1" pipe size		16	.500		18.25	29.50		47.75	64
0160	1-1/2" pipe size		12	.667		30	39		69	91.50
0180	2" pipe size	▼	8	1		44.50	58.50		103	138
0220	3" pipe size	Q-5	11	1.455		289	76.50		365.50	435
0240	4" pipe size	"	5	3.200	▼	490	168		658	795
0500	For galvanized body, add					50%				
1000	Flanged, 125 lb., 1-1/2" pipe size	1 Stpi	11	.727	Ea.	155	42.50		197.50	235
1020	2" pipe size	"	8	1		113	58.50		171.50	213
1040	3" pipe size	Q-5	4.50	3.556		150	187		337	450
1060	4" pipe size	"	3	5.333		247	281		528	695
1080	5" pipe size	Q-6	3.40	7.059		385	385		770	1,000
1100	6" pipe size	"	3	8	▼	495	435		930	1,200
1500	For 250 lb. rating, add					20%				
2000	For galvanized body, add					50%				
2500	For steel body, add					40%				

23 21 20.88 Venturi Flow

0010 VENTURI FLOW, Measuring device										
0050	1/2" diameter	1 Stpi	24	.333	Ea.	281	19.50		300.50	340
0120	1" diameter		19	.421		276	24.50		300.50	340
0140	1-1/4" diameter		15	.533		340	31		371	420
0160	1-1/2" diameter		13	.615		355	36		391	445
0180	2" diameter	▼	11	.727		365	42.50		407.50	470
0220	3" diameter	Q-5	14	1.143		515	60		575	660
0240	4" diameter	"	11	1.455		775	76.50		851.50	965
0280	6" diameter	Q-6	3.50	6.857		1,125	375		1,500	1,825
0500	For meter, add					2,125			2,125	2,350

23 21 23 – Hydronic Pumps

23 21 23.13 In-Line Centrifugal Hydronic Pumps

0010 IN-LINE CENTRIFUGAL HYDRONIC PUMPS										
0600	Bronze, sweat connections, 1/40 HP, in line									
0640	3/4" size	Q-1	16	1	Ea.	212	52		264	310
1000	Flange connection, 3/4" to 1-1/2" size									
1040	1/12 HP	Q-1	6	2.667	Ea.	545	138		683	810
1060	1/8 HP	▼	6	2.667		940	138		1,078	1,225
1100	1/3 HP	▼	6	2.667		1,050	138		1,188	1,350
1140	2" size, 1/6 HP	▼	5	3.200		1,350	166		1,516	1,725
1180	2-1/2" size, 1/4 HP	▼	5	3.200	▼	1,775	166		1,941	2,200
2000	Cast iron, flange connection									
2040	3/4" to 1-1/2" size, in line, 1/12 HP	Q-1	6	2.667	Ea.	355	138		493	600
2100	1/3 HP	▼	6	2.667		660	138		798	935
2140	2" size, 1/6 HP	▼	5	3.200		720	166		886	1,050
2180	2-1/2" size, 1/4 HP	▼	5	3.200		960	166		1,126	1,300
2220	3" size, 1/4 HP	▼	4	4	▼	975	207		1,182	1,400

23 21 Hydronic Piping and Pumps

23 21 23 – Hydronic Pumps

23 21 23.13 In-Line Centrifugal Hydronic Pumps				Daily Labor- Crew Output Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
2600	For nonferrous impeller, add					3%				

23 21 29 – Automatic Condensate Pump Units

23 21 29.10 Condensate Removal Pump System

0010	CONDENSATE REMOVAL PUMP SYSTEM									
0020	Pump with 1 gal. ABS tank									
0100	115 V									
0120	1/50 HP, 200 GPH	G	1 Stpi	12	.667	Eo.	191	39	230	269
0140	1/18 HP, 270 GPH	G		10	.800		204	47	251	295
0160	1/5 HP, 450 GPH	G	▼	8	1	▼	455	58.50	513.50	590
0200	230 V									
0240	1/18 HP, 270 GPH	G	1 Stpi	10	.800	Eo.	211	47	258	305
0260	1/5 HP, 450 GPH	G	"	8	1	"	505	58.50	563.50	645

23 22 Steam and Condensate Piping and Pumps

23 22 13 – Steam and Condensate Heating Piping

23 22 13.23 Aboveground Steam and Condensate Piping

0010	ABOVEGROUND STEAM AND CONDENSATE HEATING PIPING									
0020	Condensate meter									
0100	500 lb. per hour		1 Stpi	14	.571	Eo.	3,275	33.50	3,308.50	3,650
0140	1500 lb. per hour		"	7	1.143	"	3,575	67	3,642	4,025

23 22 23 – Steam Condensate Pumps

23 22 23.10 Condensate Return System

0010	CONDENSATE RETURN SYSTEM									
2000	Simplex									
2010	With pump, motor, CI receiver, float switch									
2020	3/4 HP, 15 GPM		Q-1	1.80	8.889	Eo.	6,100	460	6,560	7,425
2100	Duplex									
2110	With 2 pumps and motors, CI receiver, float switch, alternator									
2120	3/4 HP, 15 GPM, 15 gal. CI rcvr.		Q-1	1.40	11.429	Eo.	6,675	590	7,265	8,225
2130	1 HP, 25 GPM			1.20	13.333		8,000	690	8,690	9,850
2140	1-1/2 HP, 45 GPM			1	16		9,300	830	10,130	11,500
2150	1-1/2 HP, 60 GPM			1	16		10,400	830	11,230	12,800

23 31 HVAC Ducts and Casings

23 31 13 – Metal Ducts

23 31 13.13 Rectangular Metal Ducts

0010	RECTANGULAR METAL DUCTS	R233100-20								
0020	Fabricated rectangular, includes fittings, joints, supports,									
0021	allowance for flexible connections and field sketches.									
0030	Does not include "as-built dwgs." or insulation.									
0031	NOTE: Fabrication and installation are combined									
0040	as LABOR cost. Approx. 25% fittings assumed.									
0042	Fabrication/Inst. is to commercial quality standards									
0043	(SMACNA or equiv.) for structure, sealing, leak testing, etc.									
0050	Add to labor for elevated installation									
0051	of fabricated ductwork									
0052	10' to 15' high							6%		
0053	15' to 20' high							12%		

23 31 HVAC Ducts and Casings

23 31 13 – Metal Ducts

23 31 13.13 Rectangular Metal Ducts

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0054	20' to 25' high						15%			
0055	25' to 30' high						21%			
0056	30' to 35' high						24%			
0057	35' to 40' high						30%			
0058	Over 40' high						33%			
0072	For duct insulation see Line 23 07 13.10 3000									
0100	Aluminum, alloy 3003-H14, under 100 lb.	Q-10	75	.320	Lb.	3.66	16.35		20.01	29
0110	100 to 500 lb.		80	.300		2.38	15.30		17.68	26
0120	500 to 1,000 lb.		95	.253		2.25	12.90		15.15	22
0140	1,000 to 2,000 lb.		120	.200		2.16	10.20		12.36	18
0150	2,000 to 5,000 lb.		130	.185		2.16	9.40		11.56	16.80
0160	Over 5,000 lb.		145	.166		2.16	8.45		10.61	15.30
0500	Galvanized steel, under 200 lb.		235	.102		.66	5.20		5.86	8.70
0520	200 to 500 lb.		245	.098		.62	5		5.62	8.35
0540	500 to 1,000 lb.		255	.094		.61	4.80		5.41	8
0560	1,000 to 2,000 lb.		265	.091		.60	4.62		5.22	7.70
0570	2,000 to 5,000 lb.		275	.087		.60	4.46		5.06	7.45
0580	Over 5,000 lb.		285	.084		.60	4.30		4.90	7.20
1000	Stainless steel, type 304, under 100 lb.		165	.145		6.35	7.45		13.80	18.30
1020	100 to 500 lb.		175	.137		4.05	7		11.05	15.15
1030	500 to 1,000 lb.		190	.126		2.95	6.45		9.40	13.10
1040	1,000 to 2,000 lb.		200	.120		2.89	6.15		9.04	12.55
1050	2,000 to 5,000 lb.		225	.107		2.39	5.45		7.84	10.95
1060	Over 5,000 lb.		235	.102		2.35	5.20		7.55	10.55
1100	For medium pressure ductwork, odd						15%			
1200	For high pressure ductwork, odd						40%			
1210	For welded ductwork, odd						85%			
1220	For 30% fittings, odd						11%			
1224	For 40% fittings, odd						34%			
1228	For 50% fittings, odd						56%			
1232	For 60% fittings, odd						79%			
1236	For 70% fittings, odd						101%			
1240	For 80% fittings, odd						124%			
1244	For 90% fittings, odd						147%			
1248	For 100% fittings, add						169%			
1252	Note: Fittings odd includes time for detailing and installation.									

23 31 13.19 Metal Duct Fittings

0010	METAL DUCT FITTINGS									
2000	Fabrics for flexible connections, with metal edge	1 Shee	100	.080	L.F.	3.44	4.38		7.82	10.50
2100	Without metal edge	"	160	.050	"	2.46	2.74		5.20	6.90

23 31 16 – Nonmetal Ducts

23 31 16.13 Fibrous-Glass Ducts

0010	FIBROUS-GLASS DUCTS									
		R233100-20								
3490	Rigid fiberglass duct board, foil reinf. kraft facing									
3500	Rectangular, 1" thick, alum. faced, (FRK), std. weight	Q-10	350	.069	SF Surf	.77	3.50		4.27	6.20

23 33 Air Duct Accessories

23 33 13 – Dampers

23 33 13.13 Volume-Control Dampers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	VOLUME-CONTROL DAMPERS									
5990	Multi-blade dampers, opposed blade, 8" x 6"	1 Shee	24	.333	Ea.	21.50	18.25		39.75	52
5994	8" x 8"		22	.364		22.50	19.90		42.40	55
5996	10" x 10"		21	.381		26.50	21		47.50	61.50
6000	12" x 12"		21	.381		29.50	21		50.50	64.50
6020	12" x 18"		18	.444		39.50	24.50		64	80.50
6030	14" x 10"		20	.400		29	22		51	65
6031	14" x 14"		17	.471		35.50	25.50		61	78.50
6033	16" x 12"		17	.471		35.50	25.50		61	78.50
6035	16" x 16"		16	.500		44	27.50		71.50	90.50
6037	18" x 16"		15	.533		48	29		77	97.50
6038	18" x 18"		15	.533		52	29		81	102
6070	20" x 16"		14	.571		52	31.50		83.50	105
6072	20" x 20"		13	.615		62.50	33.50		96	121
6074	22" x 18"		14	.571		62.50	31.50		94	117
6076	24" x 16"		11	.727		61	40		101	129
6078	24" x 20"		8	1		72.50	54.50		127	164
6080	24" x 24"		8	1		85	54.50		139.50	177
6110	26" x 26"		6	1.333		95	73		168	216
6133	30" x 30"	Q-9	6.60	2.424		137	119		256	330
6135	32" x 32"		6.40	2.500		154	123		277	355
6180	48" x 36"		5.60	2.857		253	141		394	495
8000	Multi-blade dampers, parallel blade									
8100	8" x 8"	1 Shee	24	.333	Ea.	82	18.25		100.25	118
8140	16" x 10"		20	.400		103	22		125	148
8200	24" x 16"		11	.727		134	40		174	209
8260	30" x 18"		7	1.143		186	62.50		248.50	300

23 33 13.16 Fire Dampers

0010	FIRE DAMPERS									
3000	Fire damper, curtain type, 1-1/2 hr. rated, vertical, 6" x 6"	1 Shee	24	.333	Ea.	24	18.25		42.25	54.50
3020	8" x 6"		22	.364		24	19.90		43.90	57
3240	16" x 14"		18	.444		44	24.50		68.50	85.50
3400	24" x 20"		8	1		54	54.50		108.50	143

23 33 13.28 Splitter Damper Assembly

0010	SPLITTER DAMPER ASSEMBLY									
7000	Self locking, 1' rod	1 Shee	24	.333	Ea.	23.50	18.25		41.75	53.50
7020	3' rod		22	.364		30	19.90		49.90	63.50
7040	4' rod		20	.400		33.50	22		55.50	70.50
7060	6' rod		18	.444		41	24.50		65.50	82

23 33 19 – Duct Silencers

23 33 19.10 Duct Silencers

0010	DUCT SILENCERS									
9000	Silencers, noise control for air flow, duct				MCFM	57			57	63

23 33 33 – Duct-Mounting Access Doors

23 33 33.13 Duct Access Doors

0010	DUCT ACCESS DOORS									
1000	Duct access door, insulated, 6" x 6"	1 Shee	14	.571	Ea.	16.05	31.50		47.55	65
1020	10" x 10"		11	.727		18.45	40		58.45	81.50
1040	12" x 12"		10	.800		20	44		64	89
1050	12" x 18"		9	.889		37	48.50		85.50	115
1070	18" x 18"		8	1		32.50	54.50		87	119

23 33 Air Duct Accessories

23 33 33 – Duct-Mounting Access Doors

23 33 33.13 Duct Access Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
		1 Shee	8	1	Ea.	44	Labor	Equipment		
1074	24" x 18"						54.50		98.50	132

23 33 46 – Flexible Ducts

23 33 46.10 Flexible Air Ducts

0010	FLEXIBLE AIR DUCTS									
		R233100-20								
1280	Add to labor for elevated installation									
1282	of prefabricated (purchased) ductwork									
1283	10' to 15' high						10%			
1284	15' to 20' high						20%			
1285	20' to 25' high						25%			
1286	25' to 30' high						35%			
1287	30' to 35' high						40%			
1288	35' to 40' high						50%			
1289	Over 40' high						55%			
1300	Flexible, coated fiberglass fabric on corr. resist. metal helix									
1400	pressure to 12" (WG) UL-181									
1500	Noninsulated, 3" diameter		Q-9	400	.040	L.F.	1.12	1.97	3.09	4.24
1540	5" diameter			320	.050		1.30	2.46	3.76	5.20
1560	6" diameter			280	.057		1.50	2.81	4.31	5.95
1580	7" diameter			240	.067		1.53	3.28	4.81	6.70
1600	8" diameter			200	.080		1.91	3.94	5.85	8.10
1640	10" diameter			160	.100		2.46	4.92	7.38	10.20
1660	12" diameter			120	.133		2.94	6.55	9.49	13.25
1900	Insulated, 1" thick, PE jacket, 3" diameter	G		380	.042		2.60	2.07	4.67	6.05
1910	4" diameter	G		340	.047		2.60	2.32	4.92	6.40
1920	5" diameter	G		300	.053		2.60	2.63	5.23	6.85
1940	6" diameter	G		260	.062		2.94	3.03	5.97	7.85
1960	7" diameter	G		220	.073		3.20	3.58	6.78	8.95
1980	8" diameter	G		180	.089		3.49	4.38	7.87	10.55
2020	10" diameter	G		140	.114		4.25	5.65	9.90	13.30
2040	12" diameter	G		100	.160		4.90	7.90	12.80	17.45

23 33 53 – Duct Liners

23 33 53.10 Duct Liner Board

0010	DUCT LINER BOARD									
3340	Board type fiberglass liner, FSK, 1-1/2 lb. density									
3344	1" thick	G	Q-14	150	.107	S.F.	.60	4.91	5.51	8.30
3345	1-1/2" thick	G		130	.123		.66	5.65	6.31	9.55
3346	2" thick	G		120	.133		.77	6.15	6.92	10.40
3348	3" thick	G		110	.145		.99	6.70	7.69	11.50
3350	4" thick	G		100	.160		1.22	7.35	8.57	12.80
3356	3 lb. density, 1" thick	G		150	.107		.77	4.91	5.68	8.50
3358	1-1/2" thick	G		130	.123		.97	5.65	6.62	9.85
3360	2" thick	G		120	.133		1.18	6.15	7.33	10.85
3362	2-1/2" thick	G		110	.145		1.38	6.70	8.08	11.90
3364	3" thick	G		100	.160		1.59	7.35	8.94	13.20
3366	4" thick	G		90	.178		2	8.20	10.20	14.95
3370	6 lb. density, 1" thick	G		140	.114		1.09	5.25	6.34	9.40
3374	1-1/2" thick	G		120	.133		1.46	6.15	7.61	11.15
3378	2" thick	G		100	.160		1.82	7.35	9.17	13.45
3490	Board type, fiberglass liner, 3 lb. density									
3680	No finish									
3700	1" thick	G	Q-14	170	.094	S.F.	.43	4.33	4.76	7.20
3710	1-1/2" thick	G		140	.114		.64	5.25	5.89	8.90

23 33 Air Duct Accessories

23 33 53 – Duct Liners

23 33 53.10 Duct Liner Board			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
3720	2" thick	G	Q-14	130	.123	S.F.	.86	5.65		6.51	9.75
3940	Board type, non-fibrous foam										
3950	Temperature, bacterio and fungi resistant										
3960	1" thick	G	Q-14	150	.107	S.F.	2.38	4.91		7.29	10.25
3970	1-1/2" thick	G		130	.123		3.28	5.65		8.93	12.40
3980	2" thick	G		120	.133		3.98	6.15		10.13	13.95

23 34 HVAC Fans

23 34 13 – Axial HVAC Fans

23 34 13.10 Axial Flow HVAC Fans

0010	AXIAL FLOW HVAC FANS	R233400-10									
0020	Air conditioning and process air handling										
0030	Axial flow, compact, low sound, 2.5" S.P.										
0050	3,800 CFM, 5 HP		Q-20	3.40	5.882	Ea.	5,025	294		5,319	6,000
0080	6,400 CFM, 5 HP			2.80	7.143		5,625	360		5,985	6,750
0100	10,500 CFM, 7-1/2 HP			2.40	8.333		7,000	415		7,415	8,325
0120	15,600 CFM, 10 HP			1.60	12.500		8,825	625		9,450	10,700
1500	Voneaxial, low pressure, 2000 CFM, 1/2 HP			3.60	5.556		2,150	278		2,428	2,800
1520	4,000 CFM, 1 HP			3.20	6.250		2,525	315		2,840	3,250
1540	8,000 CFM, 2 HP			2.80	7.143		3,200	360		3,560	4,050

23 34 14 – Blower HVAC Fans

23 34 14.10 Blower Type HVAC Fans

0010	BLOWER TYPE HVAC FANS										
2500	Ceiling fan, right angle, extra quiet, 0.10" S.P.										
2520	95 CFM		Q-20	20	1	Ea.	287	50		337	390
2540	210 CFM			19	1.053		340	52.50		392.50	455
2560	385 CFM			18	1.111		430	55.50		485.50	560
2580	885 CFM			16	1.250		850	62.50		912.50	1,025
2600	1,650 CFM			13	1.538		1,175	77		1,252	1,425
2620	2,960 CFM			11	1.818		1,575	91		1,666	1,875
2640	For wall or roof cap, odd		1 Shee	16	.500		287	27.50		314.50	355
2660	For straight thru fan, add						10%				
2680	For speed control switch, odd		1 Elec	16	.500		157	26.50		183.50	212
7500	Utility set, steel construction, pedestal, 1/4" S.P.										
7520	Direct drive, 150 CFM, 1/8 HP		Q-20	6.40	3.125	Ea.	845	156		1,001	1,175
7540	485 CFM, 1/6 HP			5.80	3.448		1,075	173		1,248	1,425
7560	1950 CFM, 1/2 HP			4.80	4.167		1,250	209		1,459	1,700
7580	2410 CFM, 3/4 HP			4.40	4.545		2,300	228		2,528	2,875
7600	3328 CFM, 1-1/2 HP			3	6.667		2,575	335		2,910	3,325
7680	V-belt drive, drive cover, 3 phase										
7700	800 CFM, 1/4 HP		Q-20	6	3.333	Ea.	955	167		1,122	1,300
7720	1,300 CFM, 1/3 HP			5	4		1,000	200		1,200	1,400
7740	2,000 CFM, 1 HP			4.60	4.348		1,175	218		1,393	1,625
7760	2,900 CFM, 3/4 HP			4.20	4.762		1,600	238		1,838	2,100

23 34 16 – Centrifugal HVAC Fans

23 34 16.10 Centrifugal Type HVAC Fans

0010	CENTRIFUGAL TYPE HVAC FANS										
0200	In-line centrifugal, supply/exhaust booster										
0220	aluminum wheel/hub, disconnect switch, 1/4" S.P.										
0240	500 CFM, 10" diameter connection		Q-20	3	6.667	Ea.	1,250	335		1,585	1,875

23 34 HVAC Fans

23 34 16 – Centrifugal HVAC Fans

23 34 16.10 Centrifugal Type HVAC Fans		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0260	1,380 CFM, 12" diameter connection	Q-20	2	10	Ea.	1,325	500		1,825	2,200
0280	1,520 CFM, 16" diameter connection		2	10		1,450	500		1,950	2,350
0300	2,560 CFM, 18" diameter connection		1	20		1,575	1,000		2,575	3,250
0320	3,480 CFM, 20" diameter connection		.80	25		1,875	1,250		3,125	3,950
0326	5,080 CFM, 20" diameter connection		.75	26.667		2,025	1,325		3,350	4,250
3500	Centrifugal, airfoil, motor and drive, complete									
3520	1000 CFM, 1/2 HP	Q-20	2.50	8	Ea.	1,850	400		2,250	2,625
3540	2,000 CFM, 1 HP		2	10		2,075	500		2,575	3,050
3560	4,000 CFM, 3 HP		1.80	11.111		2,650	555		3,205	3,750
3580	8,000 CFM, 7-1/2 HP		1.40	14.286		3,975	715		4,690	5,450
3600	12,000 CFM, 10 HP		1	20		5,300	1,000		6,300	7,350
5000	Utility set, centrifugal, V belt drive, motor									
5020	1/4" S.P., 1200 CFM, 1/4 HP	Q-20	6	3.333	Ea.	1,650	167		1,817	2,075
5040	1520 CFM, 1/3 HP		5	4		2,125	200		2,325	2,650
5060	1850 CFM, 1/2 HP		4	5		2,125	250		2,375	2,700
5080	2180 CFM, 3/4 HP		3	6.667		2,525	335		2,860	3,275
5100	1/2" S.P., 3600 CFM, 1 HP		2	10		2,975	500		3,475	4,025
5120	4250 CFM, 1-1/2 HP		1.60	12.500		3,150	625		3,775	4,425
5140	4800 CFM, 2 HP		1.40	14.286		3,825	715		4,540	5,275
7000	Roof exhauster, centrifugal, aluminum housing, 12" galvanized									
7020	curb, bird screen, back draft damper, 1/4" S.P.									
7100	Direct drive, 320 CFM, 11" sq. damper	Q-20	7	2.857	Ea.	665	143		808	950
7120	600 CFM, 11" sq. damper		6	3.333		865	167		1,032	1,200
7140	815 CFM, 13" sq. damper		5	4		865	200		1,065	1,250
7160	1450 CFM, 13" sq. damper		4.20	4.762		1,400	238		1,638	1,900
7180	2050 CFM, 16" sq. damper		4	5		1,675	250		1,925	2,225
7200	V-belt drive, 1650 CFM, 12" sq. damper		6	3.333		1,250	167		1,417	1,650
7220	2750 CFM, 21" sq. damper		5	4		1,500	200		1,700	1,950
7230	3500 CFM, 21" sq. damper		4.50	4.444		1,675	222		1,897	2,200
7240	4910 CFM, 23" sq. damper		4	5		2,050	250		2,300	2,650
7260	8525 CFM, 28" sq. damper		3	6.667		2,725	335		3,060	3,500
7280	13,760 CFM, 35" sq. damper		2	10		3,800	500		4,300	4,950
7300	20,558 CFM, 43" sq. damper		1	20		7,625	1,000		8,625	9,900
7320	For 2 speed winding, add					15%				
7340	For explosionproof motor, add					580			580	635
7360	For belt driven, tap discharge, add					15%				
8500	Wall exhausters, centrifugal, auto damper, 1/8" S.P.									
8520	Direct drive, 610 CFM, 1/20 HP	Q-20	14	1.429	Ea.	405	71.50		476.50	555
8540	796 CFM, 1/12 HP		13	1.538		845	77		922	1,050
8560	822 CFM, 1/6 HP		12	1.667		1,025	83.50		1,108.50	1,250
8580	1,320 CFM, 1/4 HP		12	1.667		2,125	83.50		2,208.50	2,450
9500	V-belt drive, 3 phase									
9520	2,800 CFM, 1/4 HP	Q-20	9	2.222	Ea.	1,825	111		1,936	2,175
9540	3,740 CFM, 1/2 HP	"	8	2.500	"	1,900	125		2,025	2,300

23 34 23 – HVAC Power Ventilators

23 34 23.10 HVAC Power Circulators and Ventilators

0010 HVAC POWER CIRCULATORS AND VENTILATORS										
3000	Paddle blade air circulator, 3 speed switch									
3020	42", 5,000 CFM high, 3000 CFM low	G	1 Elec	2.40	3.333	Ea.	163	178	341	445
3040	52", 6,500 CFM high, 4000 CFM low	G	"	2.20	3.636	"	170	194	364	475
3100	For antique white motor, same cost									
3200	For brass plated motor, same cost									

23 34 HVAC Fans

23 34 23 – HVAC Power Ventilators

23 34 23.10 HVAC Power Circulators and Ventilators				Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
3300	For light adaptor kit, add	G					Ea.	41			41	45
6000	Propeller exhaust, wall shutter											
6020	Direct drive, one speed, .075" S.P.											
6100	653 CFM, 1/30 HP		Q-20	10	2		Ea.	183	100		283	355
6120	1033 CFM, 1/20 HP			9	2.222			273	111		384	470
6140	1323 CFM, 1/15 HP			8	2.500			305	125		430	525
6300	V-belt drive, 3 phase											
6320	6175 CFM, 3/4 HP		Q-20	5	4		Ea.	2,850	200		3,050	3,425
6340	7500 CFM, 3/4 HP			5	4			2,925	200		3,125	3,500
6360	10,100 CFM, 1 HP			4.50	4.444			3,075	222		3,297	3,725
6380	14,300 CFM, 1-1/2 HP			4	5			3,325	250		3,575	4,025
6650	Residential, bath exhaust, grille, back draft damper											
6660	50 CFM		Q-20	24	.833		Ea.	61	41.50		102.50	131
6670	110 CFM			22	.909			94.50	45.50		140	173
6680	Light combination, squirrel cage, 100 watt, 70 CFM			24	.833			108	41.50		149.50	182
6700	Light/heater combination, ceiling mounted											
6710	70 CFM, 1450 watt		Q-20	24	.833		Ea.	155	41.50		196.50	235
6800	Heater combination, recessed, 70 CFM			24	.833			64.50	41.50		106	135
6820	With 2 infrored bulbs			23	.870			101	43.50		144.50	177
6900	Kitchen exhaust, grille, complete, 160 CFM			22	.909			104	45.50		149.50	183
6910	180 CFM			20	1			87	50		137	172
6920	270 CFM			18	1.111			164	55.50		219.50	266
6930	350 CFM			16	1.250			124	62.50		186.50	231
6940	Residential roof jocks and woll caps											
6944	Woll cop with back draft damper											
6946	3" & 4" diam. round duct		1 Shee	11	.727		Ea.	24.50	40		64.50	88
6948	6" diam. round duct		"	11	.727		"	61.50	40		101.50	129
6958	Roaf jack with bird screen and back draft damper											
6960	3" & 4" diam. round duct		1 Shee	11	.727		Ea.	25	40		65	88.50
6962	3-1/4" x 10" rectangular duct		"	10	.800		"	46.50	44		90.50	118
6980	Transition											
6982	3-1/4" x 10" to 6" diam. round		1 Shee	20	.400		Ea.	31	22		53	67.50

23 34 33 – Air Curtains

23 34 33.10 Air Barrier Curtains

0010	AIR BARRIER CURTAINS, Incl. motor starters, transformers,											
0050	and door switches											
2450	Conveyor openings or service windows											
3000	Service window, 5' high x 25" wide		2 Shee	5	3.200		Ea.	305	175		480	600
3100	Environmental separation											
3110	Door heights up to 8', low profile, super quiet											
3120	Unheated, variable speed											
3130	36" wide		2 Shee	4	4		Ea.	610	219		829	1,000
3134	42" wide			3.80	4.211			635	230		865	1,050
3138	48" wide			3.60	4.444			655	243		898	1,100
3142	60" wide			3.40	4.706			685	257		942	1,150
3146	72" wide		Q-3	4.60	6.957			850	380		1,230	1,500
3150	96" wide			4.40	7.273			1,300	400		1,700	2,025
3154	120" wide			4.20	7.619			1,400	420		1,820	2,150
3158	144" wide			4	8			1,700	440		2,140	2,525
3200	Door heights up to 10'											
3210	Unheated											
3230	36" wide		2 Shee	3.80	4.211		Ea.	645	230		875	1,050

23 34 HVAC Fans

23 34 33 – Air Curtains

23 34 33.10 Air Barrier Curtains

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor Equipment	Total	Total Incl O&P
3234	42" wide	2 Shee	3.60	4.444	Ea.	665	243	908	1,100
3238	48" wide		3.40	4.706		685	257	942	1,150
3242	60" wide		3.20	5		1,025	274	1,299	1,550
3246	72" wide	Q-3	4.40	7.273		1,075	400	1,475	1,800
3250	96" wide		4.20	7.619		1,275	420	1,695	2,025
3254	120" wide		4	8		1,775	440	2,215	2,600
3258	144" wide		3.80	8.421		1,925	460	2,385	2,800
3300	Door heights up to 12'								
3310	Unheated								
3334	42" wide	2 Shee	3.40	4.706	Ea.	920	257	1,177	1,400
3338	48" wide		3.20	5		925	274	1,199	1,450
3342	60" wide		3	5.333		945	292	1,237	1,500
3346	72" wide	Q-3	4.20	7.619		1,675	420	2,095	2,450
3350	96" wide		4	8		1,825	440	2,265	2,650
3354	120" wide		3.80	8.421		2,225	460	2,685	3,150
3358	144" wide		3.60	8.889		2,375	485	2,860	3,350
3400	Door heights up to 16'								
3410	Unheated								
3438	48" wide	2 Shee	3	5.333	Ea.	1,100	292	1,392	1,675
3442	60" wide	"	2.80	5.714		1,175	315	1,490	1,750
3446	72" wide	Q-3	3.80	8.421		2,000	460	2,460	2,900
3450	96" wide		3.60	8.889		2,075	485	2,560	3,025
3454	120" wide		3.40	9.412		2,825	515	3,340	3,875
3458	144" wide		3.20	10		2,925	550	3,475	4,025
3470	Heated, electric								
3474	48" wide	2 Shee	2.90	5.517	Ea.	1,850	300	2,150	2,475
3478	60" wide	"	2.70	5.926		1,875	325	2,200	2,575
3482	72" wide	Q-3	3.70	8.649		3,175	475	3,650	4,225
3486	96" wide		3.50	9.143		3,275	500	3,775	4,350
3490	120" wide		3.30	9.697		3,325	530	3,855	4,475
3494	144" wide		3.10	10.323		4,475	565	5,040	5,775

23 37 Air Outlets and Inlets

23 37 13 – Diffusers, Registers, and Grilles

23 37 13.10 Diffusers

0010	DIFFUSERS, Aluminum, apposed blade damper unless noted								
0100	Ceiling, linear, also for sidewall								
0500	Perforated, 24" x 24" lay-in panel size, 6" x 6"	1 Shee	16	.500	Ea.	151	27.50	178.50	208
0520	8" x 8"		15	.533		159	29	188	220
0530	9" x 9"		14	.571		161	31.50	192.50	225
0540	10" x 10"		14	.571		162	31.50	193.50	226
0560	12" x 12"		12	.667		168	36.50	204.50	241
0590	16" x 16"		11	.727		189	40	229	268
0600	18" x 18"		10	.800		202	44	246	289
0610	20" x 20"		10	.800		218	44	262	305
0620	24" x 24"		9	.889		239	48.50	287.50	340
1000	Rectangular, 1 to 4 way blow, 6" x 6"		16	.500		50	27.50	77.50	97
1010	8" x 8"		15	.533		58	29	87	108
1014	9" x 9"		15	.533		66	29	95	117
1016	10" x 10"		15	.533		80	29	109	132
1020	12" x 6"		15	.533		71.50	29	100.50	123

23 37 Air Outlets and Inlets

23 37 13 – Diffusers, Registers, and Grilles

23 37 13.10 Diffusers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1040	12" x 9"	1 Shee	14	.571	Ea.	75.50	31.50		107	131
1060	12" x 12"		12	.667		84.50	36.50		121	149
1070	14" x 6"		13	.615		77.50	33.50		111	137
1074	14" x 14"		12	.667		128	36.50		164.50	196
1150	18" x 18"		9	.889		138	48.50		186.50	226
1160	21" x 21"		8	1		215	54.50		269.50	320
1170	24" x 12"		10	.800		163	44		207	247
1500	Round, butterfly damper, steel, diffuser size, 6" diameter		18	.444		9	24.50		33.50	47
1520	8" diameter		16	.500		9.55	27.50		37.05	52.50
1540	10" diameter		14	.571		11.85	31.50		43.35	60.50
1560	12" diameter		12	.667		15.65	36.50		52.15	72.50
1580	14" diameter		10	.800		19.55	44		63.55	88.50
2000	T bar mounting, 24" x 24" lay-in frame, 6" x 6"		16	.500		49	27.50		76.50	96
2020	8" x 8"		14	.571		51	31.50		82.50	104
2040	12" x 12"		12	.667		60.50	36.50		97	122
2060	16" x 16"		11	.727		81	40		121	150
2080	18" x 18"	▼	10	.800		90	44		134	166
6000	For steel diffusers instead of aluminum, deduct					10%				

23 37 13.30 Grilles

0010	GRILLES									
0020	Aluminum, unless noted otherwise									
1000	Air return, steel, 6" x 6"	1 Shee	26	.308	Ea.	18.70	16.85		35.55	46
1020	10" x 6"		24	.333		18.70	18.25		36.95	48.50
1080	16" x 8"		22	.364		26.50	19.90		46.40	59.50
1100	12" x 12"		22	.364		26.50	19.90		46.40	59.50
1120	24" x 12"		18	.444		36	24.50		60.50	76.50
1220	24" x 18"		16	.500		43.50	27.50		71	90
1280	36" x 24"		14	.571		75	31.50		106.50	130
3000	Filter grille with filter, 12" x 12"		24	.333		53	18.25		71.25	86
3020	18" x 12"		20	.400		71	22		93	112
3040	24" x 18"		18	.444		83.50	24.50		108	129
3060	24" x 24"	▼	16	.500		98	27.50		125.50	150
6000	For steel grilles instead of aluminum in above, deduct				▼	10%				

23 37 13.60 Registers

0010	REGISTERS									
0980	Air supply									
1000	Ceiling/wall, O.B. damper, anodized aluminum									
1010	One or two way deflection, adj. curved face bars									
1020	8" x 4"	1 Shee	26	.308	Ea.	11.55	16.85		28.40	38.50
1120	12" x 12"		18	.444		21	24.50		45.50	60.50
1240	20" x 6"		18	.444		18.90	24.50		43.40	58
1340	24" x 8"		13	.615		25.50	33.50		59	79.50
1350	24" x 18"	▼	12	.667		47.50	36.50		84	108
2700	Above registers in steel instead of aluminum, deduct				▼	10%				
4000	Floor, toe operated damper, enameled steel									
4020	4" x 8"	1 Shee	32	.250	Ea.	9	13.70		22.70	31
4100	8" x 10"		22	.364		11	19.90		30.90	42.50
4140	10" x 10"		20	.400		13.15	22		35.15	48
4220	14" x 14"		16	.500		42	27.50		69.50	88.50
4240	14" x 20"	▼	15	.533	▼	49.50	29		78.50	98.50
4980	Air return									
5000	Ceiling or wall, fixed 45° face blades									

23 37 Air Outlets and Inlets

23 37 13 – Diffusers, Registers, and Grilles

23 37 13.60 Registers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5010	Adjustable O.B. damper, anodized aluminum									
5020	4" x 8"	1 Shee	26	.308	Ea.	11.85	16.85		28.70	38.50
5060	6" x 10"		19	.421		14.20	23		37.20	50.50
5280	24" x 24"		11	.727		65	40		105	133
5300	24" x 36"	▼	8	1	▼	110	54.50		164.50	205
6000	For steel construction instead of aluminum, deduct					10%				

23 37 15 – Louvers

23 37 15.40 HVAC Louvers

0010	HVAC LOUVERS									
0100	Aluminum, extruded, with screen, mill finish									
1002	Brick vent, see also Section 04 05 23.19									
1100	Standard, 4" deep, 8" wide, 5" high	1 Shee	24	.333	Ea.	34.50	18.25		52.75	65.50
1200	Modular, 4" deep, 7-3/4" wide, 5" high		24	.333		36	18.25		54.25	67.50
1300	Speed brick, 4" deep, 11-5/8" wide, 3-7/8" high		24	.333		36	18.25		54.25	67.50
1400	Fuel oil brick, 4" deep, 8" wide, 5" high		24	.333	▼	61.50	18.25		79.75	96
2000	Cooling tower and mechanical equip., screens, light weight		40	.200	S.F.	15.40	10.95		26.35	33.50
2020	Standard weight		35	.229		41	12.50		53.50	64
2500	Dual combination, automatic, intake or exhaust		20	.400		56	22		78	95
2520	Manual operation		20	.400		41.50	22		63.50	79.50
2540	Electric or pneumatic operation		20	.400		41.50	22		63.50	79.50
2560	Motor, for electric or pneumatic	▼	14	.571	Ea.	480	31.50		511.50	580
3000	Fixed blade, continuous line									
3100	Mullion type, stormproof	1 Shee	28	.286	S.F.	41.50	15.65		57.15	70
3200	Stormproof		28	.286		41.50	15.65		57.15	70
3300	Vertical line		28	.286		49.50	15.65		65.15	78
3500	For damper to use with above, add					50%	30%			
3520	Motor, for damper, electric or pneumatic	1 Shee	14	.571	Ea.	480	31.50		511.50	580
4000	Operating, 45°, manual, electric or pneumatic		24	.333	S.F.	50	18.25		68.25	83
4100	Motor, for electric or pneumatic		14	.571	Ea.	480	31.50		511.50	580
4200	Penthouse, roof		56	.143	S.F.	24.50	7.80		32.30	39
4300	Walls		40	.200		58	10.95		68.95	80.50
5000	Thinline, under 4" thick, fixed blade	▼	40	.200	▼	24	10.95		34.95	43
5010	Finishes, applied by mfr. at additional cost, available in colors									
5020	Prime coat only, add				S.F.	3.30			3.30	3.63
5040	Baked enamel finish coating, add					6.10			6.10	6.70
5060	Anodized finish, add					6.60			6.60	7.25
5080	Duranodic finish, add					12			12	13.20
5100	Fluoropolymer finish coating, add					18.90			18.90	21
9980	For small orders (under 10 pieces), add				▼	25%				

23 37 23 – HVAC Gravity Ventilators

23 37 23.10 HVAC Gravity Air Ventilators

0010	HVAC GRAVITY AIR VENTILATORS, Includes base									
1280	Rotary ventilators, wind driven, galvanized									
1300	4" neck diameter	Q-9	20	.800	Ea.	64.50	39.50		104	131
1340	6" neck diameter		16	1		64.50	49		113.50	146
1400	12" neck diameter		10	1.600		91	79		170	220
1500	24" neck diameter		8	2		405	98.50		503.50	595
1540	36" neck diameter	▼	6	2.667	▼	655	131		786	920
2000	Stationary, gravity, syphon, galvanized									
2160	6" neck diameter, 66 CFM	Q-9	16	1	Ea.	45	49		94	125
2240	12" neck diameter, 160 CFM		10	1.600		106	79		185	237
2340	24" neck diameter, 900 CFM		8	2		360	98.50		458.50	545

23 37 Air Outlets and Inlets

23 37 23 – HVAC Gravity Ventilators

23 37 23.10 HVAC Gravity Air Ventilators		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2380	36" neck diameter, 2,000 CFM	Q-9	6	2.667	Ea.	440	131		571	685
4200	Stationary mushroom, aluminum, 16" arifice diameter		10	1.600		590	79		669	770
4220	26" arifice diameter		6.15	2.602		870	128		998	1,150
4230	30" arifice diameter		5.71	2.802		1,275	138		1,413	1,600
4240	38" arifice diameter		5	3.200		1,825	158		1,983	2,250
4250	42" arifice diameter		4.70	3.404		2,425	168		2,593	2,925
4260	50" arifice diameter		4.44	3.604		2,875	177		3,052	3,450
5000	Relief vent									
5500	Rectangular, aluminum, galvanized curb									
5510	intake/exhaust, 0.033" SP									
5580	500 CFM, 12" x 12"	Q-9	8.60	1.860	Ea.	685	91.50		776.50	890
5600	600 CFM, 12" x 16"		8	2		765	98.50		863.50	995
5640	1000 CFM, 12" x 24"		6.60	2.424		860	119		979	1,125
5680	3000 CFM, 20" x 42"		4	4		1,500	197		1,697	1,950
5880	Size is throat area, volume is at 500 fpm									

23 38 Ventilation Hoods

23 38 13 – Commercial-Kitchen Hoods

23 38 13.10 Hood and Ventilation Equipment

0010	HOOD AND VENTILATION EQUIPMENT									
2970	Exhaust haad, sst, gutter on all sides, 4' x 4' x 2'	1 Corp	1.80	4.444	Ea.	4,675	204		4,879	5,450
2980	4' x 4' x 7'	"	1.60	5	"	7,425	229		7,654	8,525

23 41 Particulate Air Filtration

23 41 13 – Panel Air Filters

23 41 13.10 Panel Type Air Filters

0010	PANEL TYPE AIR FILTERS									
2950	Mechanical media filtration units									
3000	High efficiency type, with frame, non-supported	G			MCFM	65			65	71.50
3100	Supported type	G			"	60			60	66
5500	Throwaway glass or paper media type				Ea.	3.35			3.35	3.69

23 41 16 – Renewable-Media Air Filters

23 41 16.10 Disposable Media Air Filters

0010	DISPOSABLE MEDIA AIR FILTERS									
5000	Renewable disposable roll				MCFM	19.35			19.35	21.50

23 41 19 – Washable Air Filters

23 41 19.10 Permanent Air Filters

0010	PERMANENT AIR FILTERS									
4500	Permanent washable	G			MCFM	20			20	22

23 41 23 – Extended Surface Filters

23 41 23.10 Expanded Surface Filters

0010	EXPANDED SURFACE FILTERS									
4000	Medium efficiency, extended surface	G			MCFM	5.50			5.50	6.05

23 42 Gas-Phase Air Filtration

23 42 13 – Activated-Carbon Air Filtration

23 42 13.10 Charcoal Type Air Filtration		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	CHARCOAL TYPE AIR FILTRATION									
0050	Activated charcoal type, full flow				MCFM	600			600	660
0060	Full flow, impregnated media 12" deep					225			225	248
0070	HEPA filter & frame for field erection					350			350	385
0080	HEPA filter-diffuser, ceiling install.				▼	300			300	330

23 43 Electronic Air Cleaners

23 43 13 – Washable Electronic Air Cleaners

23 43 13.10 Electronic Air Cleaners										
0010	ELECTRONIC AIR CLEANERS									
2000	Electronic air cleaner, duct mounted									
2150	1000 CFM	1 Shee	4	2	Ea.	420	109		529	630
2200	1200 CFM		3.80	2.105		505	115		620	730
2250	1400 CFM	▼	3.60	2.222	▼	520	122		642	760

23 51 Breechings, Chimneys, and Stacks

23 51 13 – Draft Control Devices

23 51 13.13 Draft-Induction Fans										
0010	DRAFT-INDUCTION FANS									
1000	Breeching installation									
1800	Hot gas, 600°F, variable pitch pulley and motor									
1860	8" diam. inlet, 1/4 H.P., 1phase, 1120 CFM	Q-9	4	4	Ea.	2,150	197		2,347	2,650
1900	12" diam. inlet, 3/4 H.P., 3 phase, 2960 CFM		3	5.333		2,925	263		3,188	3,600
1980	24" diam. inlet, 7-1/2 H.P., 3 phase, 17,760 CFM	▼	.80	20		8,375	985		9,360	10,700
2300	For multi-blade damper at fan inlet, add				▼	20%				

23 51 23 – Gas Vents

23 51 23.10 Gas Chimney Vents										
0010	GAS CHIMNEY VENTS, Prefab metal, U.L. listed									
0020	Gas, double wall, galvanized steel									
0080	3" diameter	Q-9	72	.222	V.L.F.	5.55	10.95		16.50	23
0100	4" diameter		68	.235		7.20	11.60		18.80	25.50
0120	5" diameter		64	.250		7.80	12.30		20.10	27.50
0140	6" diameter		60	.267		9.45	13.15		22.60	30.50
0160	7" diameter		56	.286		15.10	14.05		29.15	38
0180	8" diameter		52	.308		17.40	15.15		32.55	42
0200	10" diameter		48	.333		36	16.40		52.40	65
0220	12" diameter		44	.364		43	17.90		60.90	75
0260	16" diameter		40	.400		103	19.70		122.70	144
0300	20" diameter	Q-10	36	.667	▼	150	34		184	217

23 51 26 – All-Fuel Vent Chimneys

23 51 26.30 All-Fuel Vent Chimneys, Double Wall, St. Stl.										
0010	ALL-FUEL VENT CHIMNEYS, DOUBLE WALL, STAINLESS STEEL									
7780	All fuel, pressure tight, double wall, 4" insulation, U.L. listed, 1400°F.									
7790	304 stainless steel liner, aluminized steel outer jacket									
7800	6" diameter	Q-9	60	.267	V.L.F.	62	13.15		75.15	88
7804	8" diameter		52	.308		71	15.15		86.15	101
7806	10" diameter		48	.333		79	16.40		95.40	112
7808	12" diameter	▼	44	.364	▼	90.50	17.90		108.40	127

23 51 Breechings, Chimneys, and Stacks

23 51 26 – All-Fuel Vent Chimneys

23 51 26.30 All-Fuel Vent Chimneys, Double Wall, St. Stl.		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
7810	14" diameter	Q-9	42	.381	V.L.F.	102	18.75		120.75	141
7880	For 316 stainless steel liner odd				L.F.	30%				

23 52 Heating Boilers

23 52 13 – Electric Boilers

23 52 13.10 Electric Boilers, ASME

0010 ELECTRIC BOILERS, ASME, Standard controls and trim										
1000	Steam, 6 KW, 20.5 MBH	Q-19	1.20	20	Eq.	3,950	1,050		5,000	5,950
1160	60 KW, 205 MBH		1	24		6,650	1,275		7,925	9,225
1220	112 KW, 382 MBH		.75	32		9,375	1,700		11,075	12,900
1280	222 KW, 758 MBH		.55	43.636		23,800	2,300		26,100	29,700
1380	518 KW, 1768 MBH	Q-21	.36	88.889		32,600	4,825		37,425	43,200
1480	814 KW, 2778 MBH		.25	128		40,600	6,950		47,550	55,000
1600	2,340 KW, 7984 MBH		.16	200		86,500	10,900		97,400	111,500
2000	Hot water, 7.5 KW, 25.6 MBH	Q-19	1.30	18.462		4,975	975		5,950	6,950
2100	90 KW, 307 MBH		1.10	21.818		6,000	1,150		7,150	8,325
2220	296 KW, 1010 MBH		.55	43.636		16,100	2,300		18,400	21,200
2500	1036 KW, 3536 MBH	Q-21	.34	94.118		35,500	5,100		40,600	46,800
2680	2400 KW, 8191 MBH		.25	128		68,000	6,950		74,950	85,000
2820	3600 KW, 12,283 MBH		.16	200		94,000	10,900		104,900	120,000

23 52 23 – Cast-Iron Boilers

23 52 23.20 Gas-Fired Boilers

0010 GAS-FIRED BOILERS, Natural or propane, standard controls, packaged										
1000	Cast iron, with insulated jacket									
2000	Steam, gross output, 81 MBH	Q-7	1.40	22.857	Eq.	2,350	1,275		3,625	4,500
2080	203 MBH		.90	35.556		3,650	1,975		5,625	7,000
2180	400 MBH		.56	56.838		5,575	3,175		8,750	10,900
2240	765 MBH		.43	74.419		11,200	4,150		15,350	18,600
2320	1,875 MBH		.30	106		22,900	5,950		28,850	34,200
2440	4,720 MBH		.15	207		91,500	11,600		103,100	118,000
2480	6,100 MBH		.13	246		101,500	13,700		115,200	132,000
2540	6,970 MBH		.10	320		110,500	17,800		128,300	148,500
3000	Hot water, gross output, 80 MBH		1.46	21.918		2,150	1,225		3,375	4,225
3140	320 MBH		.80	40		4,500	2,225		6,725	8,325
3260	1,088 MBH		.40	80		13,500	4,450		17,950	21,600
3360	2,856 MBH		.20	160		28,300	8,900		37,200	44,600
3380	3,264 MBH		.18	179		30,000	10,000		40,000	48,100
3480	6,100 MBH		.13	250		101,500	13,900		115,400	132,500
3540	6,970 MBH		.09	359		110,500	20,000		130,500	151,500
7000	For tankless water heater, odd						10%			

23 52 23.30 Gas/Oil Fired Boilers

0010 GAS/OIL FIRED BOILERS, Combination with burners and controls, packaged										
1000	Cast iron with insulated jacket									
2000	Steam, gross output, 720 MBH	Q-7	.43	74.074	Eq.	14,400	4,125		18,525	22,000
2080	1,600 MBH		.30	107		20,400	5,950		26,350	31,500
2140	2,700 MBH		.19	165		27,500	9,225		36,725	44,100
2280	5,520 MBH		.14	235		88,500	13,100		101,600	117,000
2340	6,390 MBH		.11	296		94,500	16,500		111,000	129,000
2380	6,970 MBH		.09	372		100,500	20,700		121,200	142,000
2900	Hot water, gross output									

23 52 Heating Boilers

23 52 23 – Cast-Iron Boilers

23 52 23.30 Gas/Oil Fired Boilers

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
2910	200 MBH	Q-6	.62	39.024	Eq.	10,400	2,125		12,525	14,600
2920	300 MBH		.49	49.080		10,400	2,675		13,075	15,500
2930	400 MBH		.41	57.971		12,200	3,175		15,375	18,200
2940	500 MBH	▼	.36	67.039		13,100	3,650		16,750	19,900
3000	584 MBH	Q-7	.44	72.072		14,500	4,025		18,525	22,100
3060	1,460 MBH		.28	113		28,400	6,300		34,700	40,800
3160	4,088 MBH		.16	195		61,000	10,900		71,900	83,500
3300	13,500 MBH, 403.3 BHP		.04	727		188,500	40,500		229,000	268,000

23 52 23.40 Oil-Fired Boilers

0010	OIL-FIRED BOILERS , Stondord controls, flome retention burner, pockoged									
1000	Cast iron, with insuloted flush jacket									
2000	Steam, gross output, 109 MBH	Q-7	1.20	26.667	Eq.	2,175	1,475		3,650	4,650
2060	207 MBH		.90	35.556		3,000	1,975		4,975	6,300
2180	1,084 MBH		.38	85.106		10,500	4,750		15,250	18,800
2280	3,000 MBH		.19	170		22,800	9,475		32,275	39,400
2380	5,520 MBH		.14	235		76,000	13,100		89,100	103,500
2460	6,970 MBH	▼	.09	363	▼	97,500	20,300		117,800	137,500
3000	Hot woter, some price os steam									
4000	For tonkless coil in smoller sizes, odd				Eq.	15%				

23 52 26 – Steel Boilers

23 52 26.40 Oil-Fired Boilers

0010	OIL-FIRED BOILERS , Stondord controls, flome retention burner									
5000	Steel, with insuloted flush jacket									
7000	Hot woter, gross output, 103 MBH	Q-6	1.60	15	Eq.	1,775	820		2,595	3,175
7120	420 MBH		.70	34.483		6,700	1,875		8,575	10,200
7320	3,150 MBH	▼	.13	184		41,200	10,100		51,300	60,500
7340	For tonkless coil in steam or hot woter, odd				▼	7%				

23 52 28 – Swimming Pool Boilers

23 52 28.10 Swimming Pool Heaters

0010	SWIMMING POOL HEATERS , Not including wiring, extenol									
0020	pipng, bose or pod,									
0160	Gos fired, input, 155 MBH	Q-6	1.50	16	Eq.	1,900	875		2,775	3,425
0200	199 MBH		1	24		2,025	1,300		3,325	4,200
0280	500 MBH		.40	60		8,475	3,275		11,750	14,300
0400	1,800 MBH	▼	.14	171		18,400	9,350		27,750	34,300
2000	Electric, 12 KW, 4,800 gollon pool	Q-19	3	8		2,075	425		2,500	2,900
2020	15 KW, 7,200 gollon pool		2.80	8.571		2,100	455		2,555	3,000
2040	24 KW, 9,600 gollon pool		2.40	10		2,425	530		2,955	3,475
2100	57 KW, 24,000 gollon pool		1.20	20		3,575	1,050		4,625	5,525

23 54 Furnaces

23 54 13 – Electric-Resistance Furnaces

23 54 13.10 Electric Furnaces		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	ELECTRIC FURNACES , Hot air, blowers, std. controls									
0011	not including gas, oil or flue piping									
1000	Electric, UL listed									
1100	34.1 MBH	Q-20	4.40	4.545	Eo.	560	228		788	960

23 54 16 – Fuel-Fired Furnaces

23 54 16.13 Gas-Fired Furnaces

0010	GAS-FIRED FURNACES									
3000	Gas, AGA certified, upflow, direct drive models									
3020	45 MBH input	Q-9	4	4	Eo.	535	197		732	890
3040	60 MBH input		3.80	4.211		535	207		742	905
3060	75 MBH input		3.60	4.444		575	219		794	970
3100	100 MBH input	▼	3.20	5	▼	625	246		871	1,075

23 54 16.16 Oil-Fired Furnaces

0010	OIL-FIRED FURNACES									
6000	Oil, UL listed, atomizing gun type burner									
6020	56 MBH output	Q-9	3.60	4.444	Eo.	1,550	219		1,769	2,025
6030	84 MBH output		3.50	4.571		1,850	225		2,075	2,400
6040	95 MBH output		3.40	4.706		1,875	232		2,107	2,425
6060	134 MBH output		3.20	5		2,175	246		2,421	2,775
6080	151 MBH output	▼	3	5.333	▼	2,250	263		2,513	2,875

23 55 Fuel-Fired Heaters

23 55 13 – Fuel-Fired Duct Heaters

23 55 13.16 Gas-Fired Duct Heaters

0010	GAS-FIRED DUCT HEATERS , Includes burner, controls, stainless steel									
0020	heat exchanger. Gas fired, electric ignition									
0030	Indoor installation									
0100	120 MBH output	Q-5	4	4	Eo.	2,575	211		2,786	3,175
0130	200 MBH output		2.70	5.926		3,175	310		3,485	3,950
0140	240 MBH output		2.30	6.957		3,600	365		3,965	4,500
0180	320 MBH output	▼	1.60	10	▼	4,175	525		4,700	5,400
0300	For powered venter and odopter, odd					510			510	560
0502	For required flue pipe, see Section 23 51 23.10									
1000	Outdoor installation, with power venter									
1020	75 MBH output	Q-5	4	4	Eo.	2,950	211		3,161	3,575
1060	120 MBH output		4	4		3,275	211		3,486	3,925
1100	187 MBH output		3	5.333		4,150	281		4,431	5,000
1140	300 MBH output		1.80	8.889		7,325	470		7,795	8,750
1180	450 MBH output	▼	1.40	11.429	▼	9,075	600		9,675	10,900

23 55 33 – Fuel-Fired Unit Heaters

23 55 33.13 Oil-Fired Unit Heaters

0010	OIL-FIRED UNIT HEATERS , Cabinet, grilles, fan, ctrl., burner, no piping									
6000	Oil fired, suspension mounted, 94 MBH output	Q-5	4	4	Eo.	4,475	211		4,686	5,225
6040	140 MBH output		3	5.333		4,850	281		5,131	5,750
6060	184 MBH output		3	5.333		5,150	281		5,431	6,100

23 55 33.16 Gas-Fired Unit Heaters

0010	GAS-FIRED UNIT HEATERS , Cabinet, grilles, fan, ctrl., burner, no piping									
0022	thermostat, no piping. For flue see Section 23 51 23.10									
1000	Gas fired, floor mounted									

23 55 Fuel-Fired Heaters

23 55 33 – Fuel-Fired Unit Heaters

23 55 33.16 Gas-Fired Unit Heaters		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1100	60 MBH output	Q-5	10	1.600	Ea.	870	84		954	1,075
1140	100 MBH output		8	2		960	105		1,065	1,200
1180	180 MBH output		6	2.667		1,375	140		1,515	1,700
2000	Suspension mounted, propeller fan, 20 MBH output		8.50	1.882		1,025	99		1,124	1,275
2040	60 MBH output		7	2.286		1,225	120		1,345	1,500
2060	80 MBH output		6	2.667		1,375	140		1,515	1,725
2100	130 MBH output		5	3.200		1,725	168		1,893	2,150
2240	320 MBH output		2	8		3,525	420		3,945	4,500
2500	For powered venter and adapter, add					420			420	460
5000	Wall furnace, 17.5 MBH output	Q-5	6	2.667		760	140		900	1,050
5020	24 MBH output		5	3.200		770	168		938	1,100
5040	35 MBH output		4	4		770	211		981	1,175

23 56 Solar Energy Heating Equipment

23 56 16 – Packaged Solar Heating Equipment

23 56 16.40 Solar Heating Systems

0010	SOLAR HEATING SYSTEMS									
0020	System/Package prices, not including connecting									
0030	pipe, insulation, or special heating/plumbing fixtures									
0500	Hot water, standard package, low temperature									
0540	1 collector, circulator, fittings, 65 gal. tank	G	Q-1	.50	32	Ea.	3,575	1,650	5,225	6,425
0580	2 collectors, circulator, fittings, 120 gal. tank	G		.40	40		4,700	2,075	6,775	8,275
0620	3 collectors, circulator, fittings, 120 gal. tank	G		.34	47.059		6,325	2,450	8,775	10,700
0700	Medium temperature package									
0720	1 collector, circulator, fittings, 80 gal. tank	G	Q-1	.50	32	Ea.	4,950	1,650	6,600	7,950
0740	2 collectors, circulator, fittings, 120 gal. tank	G		.40	40		6,400	2,075	8,475	10,200
0780	3 collectors, circulator, fittings, 120 gal. tank	G		.30	53.333		7,225	2,775	10,000	12,100
0980	For each additional 120 gal. tank, add	G					1,675		1,675	1,850

23 56 19 – Solar Heating Components

23 56 19.50 Solar Heating Ancillary

0010	SOLAR HEATING ANCILLARY									
2300	Circulators, air									
2310	Blowers									
2400	Reversible fan, 20" diameter, 2 speed	G	Q-9	18	.889	Ea.	113	44	157	191
2870	1/12 HP, 30 GPM	G	Q-1	10	1.600	"	345	83	428	505
3000	Collector panels, air with aluminum absorber plate									
3010	Wall or roof mount									
3040	Flat black, plastic glazing									
3080	4' x 8'	G	Q-9	6	2.667	Ea.	660	131	791	930
3200	Flush roof mount, 10' to 16' x 22" wide	G	"	96	.167	L.F.	132	8.20	140.20	158
3300	Collector panels, liquid with copper absorber plate									
3330	Alum. frame, 4' x 8', 5/32" single glazing	G	Q-1	9.50	1.684	Ea.	995	87	1,082	1,225
3390	Alum. frame, 4' x 10', 5/32" single glazing	G		6	2.667		1,150	138	1,288	1,450
3450	Flat black, alum. frame, 3.5' x 7.5'	G		9	1.778		730	92	822	940
3500	4' x 8'	G		5.50	2.909		915	151	1,066	1,225
3520	4' x 10'	G		10	1.600		1,025	83	1,108	1,250
3540	4' x 12.5'	G		5	3.200		1,225	166	1,391	1,600
3600	Liquid, full wetted, plastic, alum. frame, 4' x 10'	G		5	3.200		247	166	413	520
3650	Collector panel mounting, flat roof or ground rack	G		7	2.286		244	118	362	445
3670	Roof clamps	G		70	.229	Set	2.80	11.85	14.65	21

23 56 Solar Energy Heating Equipment

23 56 19 – Solar Heating Components

23 56 19.50 Solar Heating Ancillary			Daily	Labor-			2014 Bare Costs			Total
			Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
3700	Roof strap, teflon	G	1 Plum	205	.039	L.F.	23.50	2.25		25.75
3900	Differential contraller with twa sensors									
3930	Thermostat, hard wired	G	1 Plum	8	1	Ea.	101	57.50		158.50
4100	Five station with digital read-out	G	"	3	2.667	"	236	153		389
4300	Heat exchanger									
4580	Fluid to fluid package includes twa circulating pumps									
4590	expansion tank, check valve, relief valve									
4600	contraller, high temperature cutoff and sensors	G	Q-1	2.50	6.400	Ea.	770	330		1,100
4650	Heat transfer fluid									
4700	Propylene glycol, inhibited anti-freeze	G	1 Plum	28	.286	Gal.	15.45	16.45		31.90
8250	Water storage tank with heat exchanger and electric element									
8300	80 gal. with 2" x 2 lb. density insulation	G	1 Plum	1.60	5	Ea.	1,600	288		1,888
8380	120 gal. with 2" x 2 lb. density insulation	G		1.40	5.714		1,825	330		2,155
8400	120 gal. with 2" x 2 lb. density insul., 40 S.F. heat coil	G		1.40	5.714		2,325	330		2,655

23 57 Heat Exchangers for HVAC

23 57 16 – Steam-to-Water Heat Exchangers

23 57 16.10 Shell/Tube Type Steam-to-Water Heat Exch.

0010	SHELL AND TUBE TYPE STEAM-TO-WATER HEAT EXCHANGERS									
0016	Shell & tube type, 2 or 4 pass, 3/4" O.D. copper tubes,									
0020	C.I. heads, C.I. tube sheet, steel shell									
0100	Hot water 40°F to 180°F, by steam at 10 PSI									
0120	8 GPM		Q-5	6	2.667	Ea.	2,150	140		2,290
0140	10 GPM			5	3.200		3,250	168		3,418
0160	40 GPM			4	4		5,025	211		5,236
0180	64 GPM			2	8		7,700	420		8,120
0200	96 GPM			1	16		10,300	840		11,140
0220	120 GPM		Q-6	1.50	16		13,500	875		14,375

23 57 19 – Liquid-to-Liquid Heat Exchangers

23 57 19.13 Plate-Type, Liquid-to-Liquid Heat Exchangers

0010	PLATE-TYPE, LIQUID-TO-LIQUID HEAT EXCHANGERS									
3000	Plate type,									
3100	400 GPM		Q-6	.80	30	Ea.	35,600	1,650		37,250
3120	800 GPM		"	.50	48		61,500	2,625		64,125
3140	1200 GPM		Q-7	.34	94.118		91,500	5,250		96,750
3160	1800 GPM		"	.24	133		121,000	7,425		128,425

23 57 19.16 Shell-Type, Liquid-to-Liquid Heat Exchangers

0010	SHELL-TYPE, LIQUID-TO-LIQUID HEAT EXCHANGERS									
1000	Hot water 40°F to 140°F, by water at 200°F									
1020	7 GPM		Q-5	6	2.667	Ea.	2,650	140		2,790
1040	16 GPM			5	3.200		3,750	168		3,918
1060	34 GPM			4	4		5,675	211		5,886
1100	74 GPM			1.50	10.667		10,300	560		10,860

23 62 Packaged Compressor and Condenser Units

23 62 13 – Packaged Air-Cooled Refrigerant Compressor and Condenser Units

23 62 13.10 Packaged Air-Cooled Refrig. Condensing Units		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 PACKAGED AIR-COOLED REFRIGERANT CONDENSING UNITS							Labor	Equipment		
0020	Condensing unit									
0030	Air cooled, compressor, standard controls									
0050	1.5 ton	Q-5	2.50	6.400	Eq.	1,300	335		1,635	1,925
0500	5 ton		.60	26.667		2,475	1,400		3,875	4,825
0600	10 ton		.50	32		5,325	1,675		7,000	8,400
0700	20 ton	Q-6	.40	60		12,000	3,275		15,275	18,200

23 63 Refrigerant Condensers

23 63 13 – Air-Cooled Refrigerant Condensers

23 63 13.10 Air-Cooled Refrig. Condensers

0010	AIR-COOLED REFRIG. CONDENSERS, Ratings for 30°F TD, R-22.									
0080	Air cooled, belt drive, propeller fan									
0240	50 ton	Q-6	.69	34.985	Eq.	10,600	1,900		12,500	14,500
0280	59 ton		.58	41.308		12,700	2,250		14,950	17,400
0320	73 ton		.47	51.173		16,600	2,800		19,400	22,500
0360	86 ton		.40	60.302		19,200	3,300		22,500	26,100
0380	88 ton		.39	61.697		20,600	3,375		23,975	27,800
1550	Air cooled, direct drive, propeller fan									
1590	1 ton	Q-5	3.80	4.211	Eq.	725	222		947	1,125
1600	1-1/2 ton		3.60	4.444		890	234		1,124	1,325
1620	2 ton		3.20	5		955	263		1,218	1,450
1640	5 ton		2	8		1,950	420		2,370	2,750
1660	10 ton		1.40	11.429		3,000	600		3,600	4,200
1690	16 ton		1.10	14.545		4,225	765		4,990	5,800
1720	26 ton		.84	19.002		5,450	1,000		6,450	7,500
1760	41 ton	Q-6	.77	31.008		10,300	1,700		12,000	13,900
1800	63 ton	"	.55	44.037		16,100	2,400		18,500	21,400

23 64 Packaged Water Chillers

23 64 13 – Absorption Water Chillers

23 64 13.16 Indirect-Fired Absorption Water Chillers

0010	INDIRECT-FIRED ABSORPTION WATER CHILLERS									
0020	Steam or hot water, water cooled									
0050	100 ton	Q-7	.13	240	Eq.	125,000	13,400		138,400	157,500
0400	420 ton	"	.10	323	"	366,500	18,000		384,500	430,000

23 64 16 – Centrifugal Water Chillers

23 64 16.10 Centrifugal Type Water Chillers

0010	CENTRIFUGAL TYPE WATER CHILLERS, With standard controls									
0020	Centrifugal liquid chiller, water cooled									
0030	not including water tower									
0100	2000 ton (twin 1000 ton units)	Q-7	.07	477	Eq.	895,000	26,600		921,600	1,025,000

23 64 19 – Reciprocating Water Chillers

23 64 19.10 Reciprocating Type Water Chillers

0010	RECIPROCATING TYPE WATER CHILLERS, With standard controls									
0494	Water chillers, integral air cooled condenser									
0600	100 ton cooling	Q-7	.25	129	Eq.	75,000	7,175		82,175	93,500
0980	Water cooled, multiple compressor, semi-hermetic, tower not incl.									

23 64 Packaged Water Chillers

23 64 19 – Reciprocating Water Chillers

23 64 19.10 Reciprocating Type Water Chillers

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1000	15 ton cooling	Q-6	.36	65.934	EO.	19,400	3,600		23,000	26,700
1020	25 ton cooling	Q-7	.41	78.049		19,900	4,350		24,250	28,500
1060	35 ton cooling		.31	101		24,800	5,675		30,475	35,900
1090	45 ton cooling		.29	111		35,100	6,200		41,300	48,000
1100	50 ton cooling		.28	113		36,500	6,350		42,850	49,800
1160	100 ton cooling		.18	179		62,000	10,000		72,000	83,500
1180	125 ton cooling		.16	196		71,000	10,900		81,900	94,500
1200	145 ton cooling		.16	202		82,000	11,300		93,300	107,500
1451	Water cooled, dual compressors, semi-hermetic, tower not incl.									
1500	80 ton cooling	Q-7	.14	222	EO.	29,600	12,400		42,000	51,500
1520	100 ton cooling		.14	228		40,000	12,700		52,700	63,000
1540	120 ton cooling		.14	231		48,500	12,900		61,400	73,000

23 64 23 – Scroll Water Chillers

23 64 23.10 Scroll Water Chillers

0010	SCROLL WATER CHILLERS, With standard controls									
0480	Packaged w/integral air cooled condenser									
0482	10 ton cooling	Q-7	.34	94.118	EO.	20,500	5,250		25,750	30,400
0490	15 ton cooling		.37	86.486		22,200	4,825		27,025	31,700
0500	20 ton cooling		.34	94.118		28,200	5,250		33,450	38,900
0520	40 ton cooling		.30	108		36,700	6,025		42,725	49,500
0680	Scroll water cooled, single compressor, hermetic, tower not incl.									
0700	2 ton cooling	Q-5	.57	28.070	EO.	3,500	1,475		4,975	6,075
0710	5 ton cooling		.57	28.070		4,175	1,475		5,650	6,825
0740	8 ton cooling		.31	52.117		5,750	2,750		8,500	10,500
0760	10 ton cooling	Q-6	.36	67.039		6,625	3,650		10,275	12,800
0800	20 ton cooling	Q-7	.38	83.990		11,800	4,675		16,475	20,100
0820	30 ton cooling	"	.33	96.096		13,200	5,350		18,550	22,700

23 64 26 – Rotary-Screw Water Chillers

23 64 26.10 Rotary-Screw Type Water Chillers

0010	ROTARY-SCREW TYPE WATER CHILLERS, With standard controls									
0110	Screw, liquid chiller, air cooled, insulated evaporator									
0120	130 ton	Q-7	.14	228	EO.	91,500	12,700		104,200	119,500
0124	160 ton		.13	246		112,500	13,700		126,200	144,000
0128	180 ton		.13	250		126,500	13,900		140,400	160,000
0132	210 ton		.12	258		139,000	14,400		153,400	174,500
0136	270 ton		.12	266		159,000	14,900		173,900	197,500
0140	320 ton		.12	275		199,500	15,400		214,900	242,500
0200	Packaged unit, water cooled, not incl. tower									
0210	80 ton	Q-7	.14	223	EO.	44,600	12,500		57,100	68,000
0240	200 ton		.13	251		82,000	14,000		96,000	111,000
0270	350 ton		.12	275		167,500	15,400		182,900	207,000
1450	Water cooled, tower not included									
1580	150 ton cooling, screw compressors	Q-7	.13	240	EO.	69,000	13,400		82,400	95,500
1620	200 ton cooling, screw compressors		.13	250		95,000	13,900		108,900	125,500
1660	291 ton cooling, screw compressors		.12	260		99,000	14,500		113,500	131,000

23 65 Cooling Towers

23 65 13 – Forced-Draft Cooling Towers

23 65 13.10 Forced-Draft Type Cooling Towers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	FORCED-DRAFT TYPE COOLING TOWERS , Pockoged units									
0070	Golvonized steel									
0080	Induced droft, crossflow									
0100	Verticol, belt drive, 61 tons		Q-6	90	.267	TonAC	211	14.55	225.55	254
0150	100 ton			100	.240		203	13.10	216.10	244
0200	115 ton			109	.220		177	12	189	213
0250	131 ton			120	.200		213	10.90	223.90	251
0260	162 ton		▼	132	.182	▼	172	9.95	181.95	204
1000	For higher copocities, use multiples									
1500	Induced oir, double flow									
1900	Verticol, gear drive, 167 ton		Q-6	126	.190	TonAC	167	10.40	177.40	199
2000	297 ton			129	.186		103	10.15	113.15	128
2100	582 ton			132	.182		57	9.95	66.95	78
2150	849 ton			142	.169		77	9.25	86.25	98.50
2200	1016 ton		▼	150	.160	▼	77.50	8.75	86.25	98.50
3000	For higher copocities, use multiples									
3500	For pumps ond piping, odd		Q-6	38	.632	TonAC	105	34.50	139.50	168
4000	For absorption systems, add					"	75%	75%		
4100	Cooling woter chemical feeder		Q-5	3	5.333	EO.	365	281	646	825
5000	Fiberglass tower on golvonized steel support structure									
5010	Drow thru									
5100	100 ton		Q-6	1.40	17.143	EO.	13,100	935	14,035	15,800
5120	120 ton			1.20	20		15,200	1,100	16,300	18,500
5140	140 ton			1	24		16,500	1,300	17,800	20,100
5160	160 ton			.80	30		18,300	1,650	19,950	22,600
5180	180 ton			.65	36.923		20,800	2,025	22,825	26,000
5200	200 ton			.48	50		23,500	2,725	26,225	30,000
5300	For stoinless steel support structure, odd						30%			
5360	For higher copocities, use multiples of each size									
6000	Stoinless steel									
6010	Induced droft, crossflow, horizontol, belt drive									
6100	57 ton		Q-6	1.50	16	EO.	26,500	875	27,375	30,500
6120	91 ton			.99	24.242		32,100	1,325	33,425	37,300
6140	111 ton			.43	55.814		40,800	3,050	43,850	49,500
6160	126 ton			.22	109		40,800	5,950	46,750	54,000

23 73 Indoor Central-Station Air-Handling Units

23 73 13 – Modular Indoor Central-Station Air-Handling Units

23 73 13.10 Air-Handling Units

0010	AIR-HANDLING UNITS , Built-Up									
0100	With cooling/heating coil section, filters, mixing box									
0880	Single zone, horizontol/verticol									
0890	Constant volume									
0900	1600 CFM		Q-5	1.20	13.333	EO.	3,575	700	4,275	4,975
0920	5000 CFM		Q-6	1.40	17.143		9,300	935	10,235	11,600
0940	11,500 CFM			1	24		18,800	1,300	20,100	22,700
0970	22,000 CFM			.60	40		36,000	2,175	38,175	42,900
1000	40,000 CFM			.30	80		55,000	4,375	59,375	67,000

23 73 Indoor Central-Station Air-Handling Units

23 73 39 – Indoor, Direct Gas-Fired Heating and Ventilating Units

23 73 39.10 Make-Up Air Unit		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	MAKE-UP AIR UNIT									
0020	Indoor suspension, natural/LP gas, direct fired,									
0032	standard control. For flue see Section 23 51 23.10									
0040	70°F temperature rise, MBH is input									
0100	75 MBH input	Q-6	3.60	6.667	Eq.	4,900	365		5,265	5,950
0160	150 MBH input		3	8		5,975	435		6,410	7,225
0220	225 MBH input		2.40	10		6,675	545		7,220	8,175
0300	400 MBH input		1.60	15		16,600	820		17,420	19,400
0600	For discharge louver assembly, add					5%				
0700	For filters, add					10%				
0800	For air shut-off damper section, add					30%				

23 74 Packaged Outdoor HVAC Equipment

23 74 33 – Dedicated Outdoor-Air Units

23 74 33.10 Rooftop Air Conditioners

0010	ROOFTOP AIR CONDITIONERS , Standard controls, curb, economizer									
1000	Single zone, electric cool, gas heat									
1100	3 ton cooling, 60 MBH heating	R236000-20	Q-5	.70	22.857	Eq.	3,850	1,200	5,050	6,050
1120	4 ton cooling, 95 MBH heating			.61	26.403		4,525	1,400	5,925	7,075
1140	5 ton cooling, 112 MBH heating			.56	28.521		5,275	1,500	6,775	8,075
1145	6 ton cooling, 140 MBH heating			.52	30.769		6,200	1,625	7,825	9,275
1150	7.5 ton cooling, 170 MBH heating			.50	32.258		8,125	1,700	9,825	11,500
1156	8.5 ton cooling, 170 MBH heating			.46	34.783		8,800	1,825	10,625	12,500
1160	10 ton cooling, 200 MBH heating		Q-6	.67	35.982		11,600	1,975	13,575	15,800
1170	12.5 ton cooling, 230 MBH heating			.63	37.975		14,900	2,075	16,975	19,500
1190	17.5 ton cooling, 330 MBH heating			.52	45.889		17,800	2,500	20,300	23,400
1200	20 ton cooling, 360 MBH heating		Q-7	.67	47.976		23,800	2,675	26,475	30,100
1210	25 ton cooling, 450 MBH heating			.56	57.554		27,700	3,200	30,900	35,400
1220	30 ton cooling, 540 MBH heating			.47	68.376		28,600	3,800	32,400	37,300
1240	40 ton cooling, 675 MBH heating			.35	91.168		36,900	5,075	41,975	48,300
2000	Multizone, electric cool, gas heat, economizer									
2100	15 ton cooling, 360 MBH heating		Q-7	.61	52.545	Eq.	65,000	2,925	67,925	76,000
2120	20 ton cooling, 360 MBH heating			.53	60.038		70,000	3,350	73,350	82,000
2200	40 ton cooling, 540 MBH heating			.28	113		122,500	6,350	128,850	144,000
2210	50 ton cooling, 540 MBH heating			.23	142		152,000	7,925	159,925	179,500
2220	70 ton cooling, 1,500 MBH heating			.16	198		164,500	11,100	175,600	197,500
2240	80 ton cooling, 1,500 MBH heating			.14	228		188,000	12,700	200,700	226,000
2260	90 ton cooling, 1,500 MBH heating			.13	256		197,500	14,300	211,800	238,500
2280	105 ton cooling, 1,500 MBH heating			.11	290		217,500	16,200	233,700	263,500
2400	For hot water heat coil, deduct						5%			
2500	For steam heat coil, deduct						2%			
2600	For electric heat, deduct						3%	5%		

23 81 Decentralized Unitary HVAC Equipment

23 81 13 – Packaged Terminal Air-Conditioners

23 81 13.10 Packaged Cabinet Type Air-Conditioners		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	PACKAGED CABINET TYPE AIR-CONDITIONERS, Cabinet, wall sleeve,									
0100	louver, electric heat, thermostat, manual changeover, 208 V									
0200	6,000 BTUH cooling, 8800 BTU heat	Q-5	6	2.667	Ea.	775	140		915	1,075
0220	9,000 BTUH cooling, 13,900 BTU heat		5	3.200		850	168		1,018	1,200
0240	12,000 BTUH cooling, 13,900 BTU heat		4	4		920	211		1,131	1,325
0260	15,000 BTUH cooling, 13,900 BTU heat	▼	3	5.333		1,150	281		1,431	1,700
0500	For hot water coil, increase heat by 10%, add					5%	10%			
1000	For steam, increase heat output by 30%, add					8%	10%			

23 81 19 – Self-Contained Air-Conditioners

23 81 19.20 Self-Contained Single Package

0010	SELF-CONTAINED SINGLE PACKAGE									
0100	Air cooled, fan free blow air duct, not incl. remote condenser									
0110	Constant volume									
0200	3 ton cooling	Q-5	1	16	Ea.	3,750	840		4,590	5,375
0220	5 ton cooling	Q-6	1.20	20		4,450	1,100		5,550	6,550
0240	10 ton cooling	Q-7	1	32		7,375	1,775		9,150	10,800
0260	20 ton cooling		.90	35.556		17,200	1,975		19,175	21,900
0280	30 ton cooling	▼	.80	40		25,300	2,225		27,525	31,200
0340	60 ton cooling	Q-8	.40	80		56,000	4,450	138	60,588	68,500
0490	For duct mounting no price change									
0500	For steam heating coils, add				Ea.	10%	10%			
1000	Water cooled fan free blow air duct, not including tower									
1010	Constant volume									
1100	3 ton cooling	Q-6	1	24	Ea.	3,725	1,300		5,025	6,050
1120	5 ton cooling	"	1	24		4,850	1,300		6,150	7,325
1140	10 ton cooling	Q-7	.90	35.556		9,075	1,975		11,050	13,000
1160	20 ton cooling		.80	40		28,600	2,225		30,825	34,800
1180	30 ton cooling	▼	.70	45.714		37,900	2,550		40,450	45,600

23 81 23 – Computer-Room Air-Conditioners

23 81 23.10 Computer Room Units

0010	COMPUTER ROOM UNITS									
1000	Air cooled, includes remote condenser but not									
1020	interconnecting tubing or refrigerant									
1080	3 ton	Q-5	.50	32	Ea.	18,200	1,675		19,875	22,700
1120	5 ton		.45	35.556		19,500	1,875		21,375	24,200
1160	6 ton		.30	53.333		35,900	2,800		38,700	43,800
1200	8 ton		.27	59.259		36,400	3,125		39,525	44,700
1240	10 ton		.25	64		38,000	3,375		41,375	46,900
1260	12 ton		.24	66.667		39,300	3,500		42,800	48,600
1280	15 ton		.22	72.727		41,800	3,825		45,625	52,000
1290	18 ton		.20	80		47,900	4,200		52,100	59,000
1300	20 ton	Q-6	.26	92.308		50,000	5,050		55,050	62,500
1320	22 ton		.24	100		50,500	5,450		55,950	64,000
1360	30 ton	▼	.21	114		62,500	6,250		68,750	78,000
2200	Chilled water, fan connection to									
2220	existing chiller system of adequate capacity									
2260	5 ton	Q-5	.74	21.622	Ea.	13,900	1,150		15,050	17,000

23 81 43 – Air-Source Unitary Heat Pumps

23 81 43.10 Air-Source Heat Pumps

0010	AIR-SOURCE HEAT PUMPS, Not including interconnecting tubing									
1000	Air to air, split system, not including curbs, pads, fan coil and ductwork									

23 81 Decentralized Unitary HVAC Equipment

23 81 43 – Air-Source Unitary Heat Pumps

23 81 43.10 Air-Source Heat Pumps		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1012	Outside condensing unit only, for fan coil see Section 23 82 19.10									
1020	2 ton cooling, 8.5 MBH heat @ 0°F	Q-5	2	8	EO.	2,300	420		2,720	3,175
1060	5 ton cooling, 27 MBH heat @ 0°F		.50	32		3,625	1,675		5,300	6,525
1080	7.5 ton cooling, 33 MBH heat @ 0°F	↓	.45	35.556		6,325	1,875		8,200	9,800
1100	10 ton cooling, 50 MBH heat @ 0°F	Q-6	.64	37.500		8,675	2,050		10,725	12,700
1120	15 ton cooling, 64 MBH heat @ 0°F		.50	48		13,400	2,625		16,025	18,800
1130	20 ton cooling, 85 MBH heat @ 0°F		.35	68.571		17,000	3,750		20,750	24,400
1140	25 ton cooling, 119 MBH heat @ 0°F		.25	96		20,400	5,250		25,650	30,400
1500	Single package, not including curbs, pads, or plenums									
1520	2 ton cooling, 6.5 MBH heat @ 0°F	Q-5	1.50	10.667	EO.	2,950	560		3,510	4,100
1580	4 ton cooling, 13 MBH heat @ 0°F		.96	16.667		4,125	880		5,005	5,875
1640	7.5 ton cooling, 35 MBH heat @ 0°F	↓	.40	40	↓	7,250	2,100		9,350	11,200

23 81 46 – Water-Source Unitary Heat Pumps

23 81 46.10 Water Source Heat Pumps

0010	WATER SOURCE HEAT PUMPS , Not incl. connecting tubing or water source									
2000	Water source to air, single package									
2100	1 ton cooling, 13 MBH heat @ 75°F	Q-5	2	8	EO.	1,825	420		2,245	2,625
2140	2 ton cooling, 19 MBH heat @ 75°F		1.70	9.412		2,050	495		2,545	3,000
2220	5 ton cooling, 29 MBH heat @ 75°F	↓	.90	17.778		3,025	935		3,960	4,750
3960	For supplementary heat coil, add				↓	10%				
4000	For increase in capacity thru use									
4020	of solar collector, size boiler at 60%									

23 82 Convection Heating and Cooling Units

23 82 16 – Air Coils

23 82 16.10 Flanged Coils

0010	FLANGED COILS									
0500	Chilled water cooling, 6 rows, 24" x 48"	Q-5	3.20	5	EO.	4,025	263		4,288	4,825
1000	Direct expansion cooling, 6 rows, 24" x 48"		2.80	5.714		4,350	300		4,650	5,250
1500	Hot water heating, 1 row, 24" x 48"		4	4		1,600	211		1,811	2,100
2000	Steam heating, 1 row, 24" x 48"	↓	3.06	5.229	↓	2,275	275		2,550	2,925

23 82 16.20 Duct Heaters

0010	DUCT HEATERS , Electric, 480 V, 3 Ph.									
0020	Finned tubular insert, 500°F									
0100	8" wide x 6" high, 4.0 kW	Q-20	16	1.250	EO.	795	62.50		857.50	970
0120	12" high, 8.0 kW		15	1.333		1,325	66.50		1,391.50	1,550
0140	18" high, 12.0 kW		14	1.429		1,850	71.50		1,921.50	2,125
0160	24" high, 16.0 kW		13	1.538		2,375	77		2,452	2,725
0180	30" high, 20.0 kW		12	1.667		2,900	83.50		2,983.50	3,325
0300	12" wide x 6" high, 6.7 kW		15	1.333		845	66.50		911.50	1,025
0360	24" high, 26.7 kW		12	1.667		2,450	83.50		2,533.50	2,825
0700	24" wide x 6" high, 17.8 kW		13	1.538		1,000	77		1,077	1,225
0760	24" high, 71.1 kW		10	2		3,075	100		3,175	3,525
8000	To obtain BTU multiply kW by 3413									

23 82 19 – Fan Coil Units

23 82 19.10 Fan Coil Air Conditioning

0010	FAN COIL AIR CONDITIONING									
0030	Fan coil AC, cabinet mounted, filters and controls									
0100	Chilled water, 1/2 ton cooling	Q-5	8	2	EO.	810	105		915	1,050
0120	1 ton cooling		6	2.667		935	140		1,075	1,225

23 82 Convection Heating and Cooling Units

23 82 19 – Fan Coil Units

23 82 19.10 Fan Coil Air Conditioning		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0140	1.5 ton cooling	Q-5	5.50	2.909	Eo.	1,025	153		1,178	1,350
0150	2 ton cooling		5.25	3.048		1,250	160		1,410	1,625
0180	3 ton cooling	▼	4	4	▼	1,875	211		2,086	2,400
0262	For hot water coil, odd					40%	10%			
0940	Direct expansion, for use w/air cooled condensing unit, 1.5 ton cooling	Q-5	5	3.200	Eo.	755	168		923	1,075
1000	5 ton cooling	"	3	5.333		1,450	281		1,731	2,025
1040	10 ton cooling	Q-6	2.60	9.231		3,175	505		3,680	4,250
1060	20 ton cooling	"	.70	34.286		6,250	1,875		8,125	9,700
1500	For hot water coil, odd				▼	40%	10%			

23 82 19.20 Heating and Ventilating Units

0010	HEATING AND VENTILATING UNITS , Classroom units									
0020	Includes filter, heating/cooling coils, standard controls									
0080	750 CFM, 2 tons cooling	Q-6	2	12	Eo.	4,050	655		4,705	5,475
0120	1250 CFM, 3 tons cooling		1.40	17.143		4,950	935		5,885	6,875
0140	1500 CFM, 4 tons cooling	▼	.80	30		5,300	1,650		6,950	8,300
0500	For electric heat, odd					35%				
1000	For no cooling, deduct				▼	25%	10%			

23 82 27 – Infrared Units

23 82 27.10 Infrared Type Heating Units

0010	INFRARED TYPE HEATING UNITS									
0020	Gas fired, unvented, electric ignition, 100% shutoff.									
0030	Piping and wiring not included									
0060	Input, 15 MBH	Q-5	7	2.286	Eo.	555	120		675	790
0120	45 MBH		5	3.200		1,150	168		1,318	1,525
0160	60 MBH		4	4		1,200	211		1,411	1,650
0240	120 MBH	▼	2	8	▼	1,500	420		1,920	2,275
1000	Gas fired, vented, electric ignition, tubular									
1020	Piping and wiring not included, 20' to 80' lengths									
1030	Single stage, input, 60 MBH	Q-6	4.50	5.333	Eo.	1,400	291		1,691	2,000
1040	80 MBH		3.90	6.154		1,400	335		1,735	2,050
1050	100 MBH		3.40	7.059		1,400	385		1,785	2,125
1060	125 MBH		2.90	8.276		1,625	450		2,075	2,450
1070	150 MBH		2.70	8.889		1,625	485		2,110	2,500
1080	170 MBH		2.50	9.600		1,625	525		2,150	2,575
1090	200 MBH	▼	2.20	10.909	▼	1,825	595		2,420	2,900
1100	Note: Final pricing may vary due to tube length and configuration package selected									
1110										
1130	Two stage, input, 60 MBH high, 45 MBH low	Q-6	4.50	5.333	Eo.	1,525	291		1,816	2,125
1140	80 MBH high, 60 MBH low		3.90	6.154		1,525	335		1,860	2,175
1150	100 MBH high, 65 MBH low		3.40	7.059		1,525	385		1,910	2,250
1160	125 MBH high, 95 MBH low		2.90	8.276		1,725	450		2,175	2,575
1170	150 MBH high, 100 MBH low		2.70	8.889		1,725	485		2,210	2,625
1180	170 MBH high, 125 MBH low		2.50	9.600		1,925	525		2,450	2,925
1190	200 MBH high, 150 MBH low	▼	2.20	10.909	▼	1,925	595		2,520	3,025
1220	Note: Final pricing may vary due to tube length and configuration package selected									
1230										

23 82 29 – Radiators

23 82 29.10 Hydronic Heating

0010	HYDRONIC HEATING , Terminal units, not incl. main supply pipe									
1000	Radiation									
1100	Panel, baseboard, C.I., including supports, no covers	Q-5	46	.348	L.F.	36.50	18.30		54.80	67.50

23 82 Convection Heating and Cooling Units

23 82 29 – Radiators

23 82 29.10 Hydronic Heating		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3000	Radiators, cast iron									
3100	Free standing or wall hung, 6 tube, 25" high	Q-5	96	.167	Section	44	8.80		52.80	62
3200	4 tube, 19" high	"	96	.167	"	30.50	8.80		39.30	47
3250	Adj. brackets, 2 per wall radiator up to 30 sections	1 Stpi	32	.250	Ea.	34	14.65		48.65	59.50
9500	To convert SFR to BTU rating: Hot water, 150 x SFR									
9510	Forced hot water, 180 x SFR; steam, 240 x SFR									

23 82 33 – Convectors

23 82 33.10 Convector Units

0010	CONVECTOR UNITS, Terminal units, not incl. main supply pipe									
2204	Convector, multifin, 2 pipe w/cabinet									
2210	17" H x 24" L	Q-5	10	1.600	Ea.	99	84		183	236
2214	17" H x 36" L			8.60	1.860	148	98		246	310
2218	17" H x 48" L			7.40	2.162	198	114		312	390
2222	21" H x 24" L			9	1.778	99	93.50		192.50	250
2226	21" H x 36" L			8.20	1.951	148	103		251	320
2228	21" H x 48" L	↓		6.80	2.353	198	124		322	405
2240	For knob operated damper, add					140%				
2241	For metal trim strips, add	Q-5	64	.250	Ea.	19.25	13.15		32.40	41
2243	For snap-on inlet grille, add					10%	10%			
2245	For hinged access door, add	Q-5	64	.250	Ea.	35.50	13.15		48.65	59
2246	For air chamber, auto-venting, add	"	58	.276	"	6.85	14.50		21.35	29.50

23 82 36 – Finned-Tube Radiation Heaters

23 82 36.10 Finned Tube Radiation

0010	FINNED TUBE RADIATION, Terminal units, not incl. main supply pipe									
1150	Fin tube, wall hung, 14" slope top cover, with damper									
1200	1-1/4" copper tube, 4-1/4" alum. fin	Q-5	38	.421	L.F.	42	22		64	79.50
1250	1-1/4" steel tube, 4-1/4" steel fin	"	36	.444	"	39.50	23.50		63	78.50
1500	Note: fin tube may also require corners, caps, etc.									

23 82 39 – Unit Heaters

23 82 39.16 Propeller Unit Heaters

0010	PROPELLER UNIT HEATERS									
3950	Unit heaters, propeller, 115 V 2 psi steam, 60°F entering air									
4000	Horizontal, 12 MBH	Q-5	12	1.333	Ea.	360	70		430	500
4060	43.9 MBH		8	2		545	105		650	760
4140	96.8 MBH		6	2.667		795	140		935	1,075
4180	157.6 MBH		4	4		1,050	211		1,261	1,500
4240	286.9 MBH		2	8		1,650	420		2,070	2,450
4260	364 MBH		1.80	8.889		2,075	470		2,545	2,975
4270	404 MBH	↓	1.60	10	↓	2,150	525		2,675	3,175
4300	Vertical diffuser same price									
4310	Vertical flow, 40 MBH	Q-5	11	1.455	Ea.	540	76.50		616.50	710
4314	58.5 MBH		8	2		560	105		665	775
4326	131.0 MBH		4	4		845	211		1,056	1,250
4346	297.0 MBH	↓	1.80	8.889		1,600	470		2,070	2,475
4354	420 MBH, (460 V)	Q-6	1.80	13.333		2,150	730		2,880	3,475
4358	500 MBH, (460 V)		1.71	14.035		2,875	765		3,640	4,300
4362	570 MBH, (460 V)		1.40	17.143		3,925	935		4,860	5,750
4366	620 MBH, (460 V)		1.30	18.462		3,925	1,000		4,925	5,850
4370	960 MBH, (460 V)	↓	1.10	21.818	↓	7,450	1,200		8,650	10,000

23 83 Radiant Heating Units

23 83 16 – Radiant-Heating Hydronic Piping

23 83 16.10 Radiant Floor Heating		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	RADIANT FLOOR HEATING									
0100	Tubing, PEX (cross-linked polyethylene)									
0110	Oxygen barrier type for systems with ferrous materials									
0120	1/2"	Q-5	800	.020	L.F.	1.02	1.05		2.07	2.71
0130	3/4"		535	.030		1.44	1.57		3.01	3.96
0140	1"	▼	400	.040	▼	2.25	2.11		4.36	5.65
0200	Non barrier type for ferrous free systems									
0210	1/2"	Q-5	800	.020	L.F.	.58	1.05		1.63	2.23
0220	3/4"		535	.030		1.05	1.57		2.62	3.54
0230	1"	▼	400	.040	▼	1.46	2.11		3.57	4.79
1000	Manifolds									
1110	Brass									
1120	With supply and return valves, flow meter, thermometer,									
1122	auto air vent and drain/fill valve.									
1130	1", 2 circuit	Q-5	14	1.143	Eo.	245	60		305	360
1140	1", 3 circuit		13.50	1.185		280	62.50		342.50	405
1150	1", 4 circuit		13	1.231		305	65		370	435
1154	1", 5 circuit		12.50	1.280		365	67.50		432.50	500
1158	1", 6 circuit		12	1.333		395	70		465	540
1162	1", 7 circuit		11.50	1.391		430	73.50		503.50	585
1166	1", 8 circuit		11	1.455		480	76.50		556.50	640
1172	1", 9 circuit		10.50	1.524		515	80		595	685
1174	1", 10 circuit		10	1.600		555	84		639	735
1178	1", 11 circuit		9.50	1.684		575	88.50		663.50	770
1182	1", 12 circuit	▼	9	1.778	▼	635	93.50		728.50	840
1610	Copper manifold header, (cut to size)									
1620	1" header, 12 – 1/2" sweat outlets	Q-5	3.33	4.805	Eo.	91	253		344	480
1630	1-1/4" header, 12 – 1/2" sweat outlets		3.20	5		106	263		369	515
1640	1-1/4" header, 12 – 3/4" sweat outlets		3	5.333		114	281		395	550
1650	1-1/2" header, 12 – 3/4" sweat outlets		3.10	5.161		139	272		411	565
1660	2" header, 12 – 3/4" sweat outlets	▼	2.90	5.517	▼	201	290		491	660
3000	Valves									
3110	Thermostatic zone valve actuator with end switch	Q-5	40	.400	Eo.	38.50	21		59.50	74.50
3114	Thermostatic zone valve actuator	"	36	.444	"	81	23.50		104.50	125
3120	Matarized stroight zone valve with operator complete									
3130	3/4"	Q-5	35	.457	Eo.	130	24		154	180
3140	1"		32	.500		141	26.50		167.50	195
3150	1-1/4"	▼	29.60	.541	▼	179	28.50		207.50	240
3500	4 Way mixing valve, manual, brass									
3530	1"	Q-5	13.30	1.203	Eo.	180	63.50		243.50	294
3540	1-1/4"		11.40	1.404		195	74		269	325
3550	1-1/2"		11	1.455		249	76.50		325.50	390
3560	2"		10.60	1.509		350	79.50		429.50	510
3800	Mixing valve matar, 4 way for valves, 1" and 1-1/4"		34	.471		310	25		335	380
3810	Mixing valve matar, 4 way for valves, 1-1/2" and 2"	▼	30	.533	▼	355	28		383	435
5000	Rodiant floor heating, zane control panel									
5120	4 Zane actuator valve control, expandable	Q-5	20	.800	Eo.	163	42		205	243
5130	6 Zane actuator valve control, expandable		18	.889		226	47		273	320
6070	Thermal track, straight panel for long continuous runs, 5.333 S.F.		40	.400		26.50	21		47.50	61.50
6080	Thermal track, utility panel, for direction reverse ot run end, 5.333 S.F.		40	.400		26.50	21		47.50	61.50
6090	Combination panel, for direction reverse plus straight run, 5.333 S.F.		40	.400		26.50	21		47.50	61.50
7000	PEX tubing fittings									
7100	Compression type									

23 83 Radiant Heating Units

23 83 16 – Radiant-Heating Hydronic Piping

23 83 16.10 Radiant Floor Heating		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
7116	Coupling									
7120	1/2" x 1/2"	1 Stpi	27	.296	Ea.	6.70	17.35		24.05	33.50
7124	3/4" x 3/4"	"	23	.348	"	10.60	20.50		31.10	42
7130	Adopter									
7132	1/2" x female sweat 1/2"	1 Stpi	27	.296	Ea.	4.36	17.35		21.71	31
7134	1/2" x female sweat 3/4"		26	.308		4.88	18		22.88	32.50
7136	5/8" x female sweat 3/4"		24	.333		7	19.50		26.50	37
7140	Elbow									
7142	1/2" x female sweat 1/2"	1 Stpi	27	.296	Ea.	6.65	17.35		24	33.50
7144	1/2" x female sweat 3/4"		26	.308		7.80	18		25.80	35.50
7146	5/8" x female sweat 3/4"	▼	24	.333	▼	8.75	19.50		28.25	39
7200	Insert type									
7206	PEX x male NPT									
7210	1/2" x 1/2"	1 Stpi	29	.276	Ea.	2.59	16.15		18.74	27.50
7220	3/4" x 3/4"		27	.296		3.81	17.35		21.16	30
7230	1" x 1"	▼	26	.308	▼	6.45	18		24.45	34
7300	PEX coupling									
7310	1/2" x 1/2"	1 Stpi	30	.267	Ea.	1.76	15.60		17.36	25.50
7320	3/4" x 3/4"		29	.276		2.15	16.15		18.30	27
7330	1" x 1"	▼	28	.286	▼	5.85	16.70		22.55	31.50
7400	PEX stainless crimp ring									
7410	1/2" x 1/2"	1 Stpi	86	.093	Ea.	.34	5.45		5.79	8.55
7420	3/4" x 3/4"		84	.095		.47	5.55		6.02	8.90
7430	1" x 1"	▼	82	.098	▼	.68	5.70		6.38	9.35

23 83 33 – Electric Radiant Heaters

23 83 33.10 Electric Heating

0010	ELECTRIC HEATING , not incl. conduit or feed wiring									
1100	Rule of thumb: Baseboard units, including control	1 Elec	4.40	1.818	kW	101	97		198	256
1300	Baseboard heaters, 2' long, 350 watt		8	1	Ea.	30	53.50		83.50	113
1400	3' long, 750 watt		8	1		34.50	53.50		88	118
1600	4' long, 1000 watt		6.70	1.194		41	63.50		104.50	141
1800	5' long, 935 watt		5.70	1.404		51	75		126	168
2000	6' long, 1500 watt		5	1.600		56	85.50		141.50	190
2400	8' long, 2000 watt	▼	4	2	▼	69.50	107		176.50	236
2950	Woll heaters with fon, 120 to 277 volt									
3160	Recessed, residential, 750 watt	1 Elec	6	1.333	Ea.	134	71		205	253
3170	1000 watt		6	1.333		134	71		205	253
3180	1250 watt		5	1.600		134	85.50		219.50	275
3190	1500 watt		4	2		134	107		241	305
3600	Thermostats, integral		16	.500		30	26.50		56.50	73
3800	Line voltage, 1 pole	▼	8	1	▼	20.50	53.50		74	103

23 84 Humidity Control Equipment

23 84 13 – Humidifiers

23 84 13.10 Humidifier Units

		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment	
0010	HUMIDIFIER UNITS									
0520	Steam, room or duct, filter, regulators, auto. controls, 220 V									
0540	11 lb. per hour	Q-5	6	2.667	Ea.	2,625	140		2,765	3,075
0560	22 lb. per hour		5	3.200		2,900	168		3,068	3,425
0580	33 lb. per hour		4	4		2,975	211		3,186	3,600
0600	50 lb. per hour		4	4		3,425	211		3,636	4,100
0620	100 lb. per hour	▼	3	5.333	▼	4,350	281		4,631	5,225

Estimating Tips

26 05 00 Common Work Results for Electrical

- Conduit should be taken off in three main categories—power distribution, branch power, and branch lighting—so the estimator can concentrate on systems and components, therefore making it easier to ensure all items have been accounted for.
- For cost modifications for elevated conduit installation, add the percentages to labor according to the height of installation, and only to the quantities exceeding the different height levels, not to the total conduit quantities.
- Remember that aluminum wiring of equal ampacity is larger in diameter than copper and may require larger conduit.
- If more than three wires at a time are being pulled, deduct percentages from the labor hours of that grouping of wires.
- When taking off grounding systems, identify separately the type and size of wire, and list each unique type of ground connection.

- The estimator should take the weights of materials into consideration when completing a takeoff. Topics to consider include: How will the materials be supported? What methods of support are available? How high will the support structure have to reach? Will the final support structure be able to withstand the total burden? Is the support material included or separate from the fixture, equipment, and material specified?
- Do not overlook the costs for equipment used in the installation. If scaffolding or highlifts are available in the field, contractors may use them in lieu of the proposed ladders and rolling staging.

26 20 00 Low-Voltage Electrical Transmission

- Supports and concrete pads may be shown on drawings for the larger equipment, or the support system may be only a piece of plywood for the back of a panelboard. In either case, it must be included in the costs.

26 40 00 Electrical and Cathodic Protection

- When taking off cathodic protection systems, identify the type and size of cable, and list each unique type of anode connection.

26 50 00 Lighting

- Fixtures should be taken off room by room, using the fixture schedule, specifications, and the ceiling plan. For large concentrations of lighting fixtures in the same area, deduct the percentages from labor hours.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 26.

26 05 Common Work Results for Electrical

26 05 05 – Selective Electrical Demolition

26 05 05.10 Electrical Demolition		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	ELECTRICAL DEMOLITION									
0020	Conduit to 15' high, including fittings & hangers									
0100	Rigid galvanized steel, 1/2" to 1" diameter	1 Elec	242	.033	L.F.		1.76		1.76	2.64
0120	1-1/4" to 2"	"	200	.040			2.13		2.13	3.19
0140	2-1/2" to 3-1/2"	2 Elec	302	.053			2.83		2.83	4.23
0160	4" to 6"	"	160	.100			5.35		5.35	8
0200	Electric metallic tubing (EMT), 1/2" to 1"	1 Elec	394	.020			1.08		1.08	1.62
0220	1-1/4" to 1-1/2"		326	.025			1.31		1.31	1.96
0240	2" to 3"		236	.034			1.81		1.81	2.71
0260	3-1/2" to 4"	2 Elec	310	.052			2.75		2.75	4.12
0270	Armored cable, (BX) avg. 50' runs									
0280	#14, 2 wire	1 Elec	690	.012	L.F.		.62		.62	.93
0290	#14, 3 wire		571	.014			.75		.75	1.12
0300	#12, 2 wire		605	.013			.71		.71	1.06
0310	#12, 3 wire		514	.016			.83		.83	1.24
0320	#10, 2 wire		514	.016			.83		.83	1.24
0330	#10, 3 wire		425	.019			1		1	1.50
0340	#8, 3 wire		342	.023			1.25		1.25	1.87
0350	Non metallic sheathed cable (Romex)									
0360	#14, 2 wire	1 Elec	720	.011	L.F.		.59		.59	.89
0370	#14, 3 wire		657	.012			.65		.65	.97
0380	#12, 2 wire		629	.013			.68		.68	1.02
0390	#10, 3 wire		450	.018			.95		.95	1.42
0400	Wiremold raceway, including fittings & hangers									
0420	Na. 3000	1 Elec	250	.032	L.F.		1.71		1.71	2.56
0440	Na. 4000		217	.037			1.97		1.97	2.94
0460	Na. 6000		166	.048			2.57		2.57	3.85
0462	Plugmold with receptacle		114	.070			3.74		3.74	5.60
0465	Telephone/power pole		12	.667	Ea.		35.50		35.50	53
0470	Non-metallic, straight section		480	.017	L.F.		.89		.89	1.33
0500	Channels, steel, including fittings & hangers									
0520	3/4" x 1-1/2"	1 Elec	308	.026	L.F.		1.39		1.39	2.07
0540	1-1/2" x 1-1/2"		269	.030			1.59		1.59	2.37
0560	1-1/2" x 1-7/8"		229	.035			1.86		1.86	2.79
0600	Copper bus duct, indoor, 3 phase									
0610	Including hangers & supports									
0620	225 amp	2 Elec	135	.119	L.F.		6.30		6.30	9.45
0640	400 amp		106	.151			8.05		8.05	12.05
0660	600 amp		86	.186			9.95		9.95	14.85
0680	1000 amp		60	.267			14.25		14.25	21.50
0700	1600 amp		40	.400			21.50		21.50	32
0720	3000 amp		10	1.600			85.50		85.50	128
1300	Transformer, dry type, 1 phase, incl. removal of									
1320	supports, wire & conduit terminations									
1340	1 kVA	1 Elec	7.70	1.039	Ea.		55.50		55.50	83
1420	75 kVA	2 Elec	2.50	6.400	"		340		340	510
1440	3 phase to 600V, primary									
1460	3 kVA	1 Elec	3.85	2.078	Ea.		111		111	166
1520	75 kVA	2 Elec	2.70	5.926			315		315	475
1550	300 kVA	R-3	1.80	11.111			590	78	668	965
1570	750 kVA	"	1.10	18.182			960	127	1,087	1,600
1800	Wire, THW-THWN-THHN, removed from									
1810	in place conduit, to 15' high									

26 05 Common Work Results for Electrical

26 05 05 – Selective Electrical Demolition

26 05 05.10 Electrical Demolition		Crew	Daily	Labor-	Unit	Material	2014 Bare Costs		Total	Total
			Output	Hours			Labor	Equipment		Incl O&P
1830	#14	1 Elec	65	.123	C.L.F.		6.55		6.55	9.85
1840	#12		55	.145			7.75		7.75	11.60
1850	#10		45.50	.176			9.40		9.40	14.05
1860	#8		40.40	.198			10.55		10.55	15.80
1870	#6		32.60	.245			13.10		13.10	19.60
1880	#4	2 Elec	53	.302			16.10		16.10	24
1890	#3		50	.320			17.05		17.05	25.50
1900	#2		44.60	.359			19.15		19.15	28.50
1910	1/0		33.20	.482			25.50		25.50	38.50
1920	2/0		29.20	.548			29		29	44
1930	3/0		25	.640			34		34	51
1940	4/0		22	.727			39		39	58
1950	250 kcmil		20	.800			42.50		42.50	64
1960	300 kcmil		19	.842			45		45	67
1970	350 kcmil		18	.889			47.50		47.50	71
1980	400 kcmil		17	.941			50		50	75
1990	500 kcmil	▼	16.20	.988	▼		52.50		52.50	79
2000	Interior fluorescent fixtures, incl. supports									
2010	& whips, to 15' high									
2100	Recessed drop-in 2' x 2', 2 lomp	2 Elec	35	.457	Eo.		24.50		24.50	36.50
2120	2' x 4', 2 lomp		33	.485			26		26	38.50
2140	2' x 4', 4 lomp		30	.533			28.50		28.50	42.50
2160	4' x 4', 4 lomp	▼	20	.800	▼		42.50		42.50	64
2180	Surface mount, acrylic lens & hinged frame									
2200	1' x 4', 2 lomp	2 Elec	44	.364	Eo.		19.40		19.40	29
2220	2' x 2', 2 lomp		44	.364			19.40		19.40	29
2260	2' x 4', 4 lomp		33	.485			26		26	38.50
2280	4' x 4', 4 lomp	▼	23	.696	▼		37		37	55.50
2300	Strip fixtures, surface mount									
2320	4' long, 1 lomp	2 Elec	53	.302	Eo.		16.10		16.10	24
2340	4' long, 2 lomp		50	.320			17.05		17.05	25.50
2360	8' long, 1 lomp		42	.381			20.50		20.50	30.50
2380	8' long, 2 lomp	▼	40	.400	▼		21.50		21.50	32
2400	Pendant mount, industrial, incl. removal									
2410	of chain or rod hangers, to 15' high									
2420	4' long, 2 lomp	2 Elec	35	.457	Eo.		24.50		24.50	36.50
2440	8' long, 2 lomp	"	27	.593	"		31.50		31.50	47.50

26 05 13 – Medium-Voltage Cables

26 05 13.16 Medium-Voltage, Single Cable

0010	MEDIUM-VOLTAGE, SINGLE CABLE Splicing & terminations not included									
0040	Copper, XLP shielding, 5 kV, #6	2 Elec	4.40	3.636	C.L.F.	158	194		352	465
0050	#4		4.40	3.636		205	194		399	515
0100	#2		4	4		242	213		455	585
0200	#1		4	4		278	213		491	625
0400	1/0		3.80	4.211		305	225		530	670
0600	2/0		3.60	4.444		385	237		622	780
0800	4/0	▼	3.20	5		500	267		767	950
1000	250 kcmil	3 Elec	4.50	5.333		620	285		905	1,100
1200	350 kcmil		3.90	6.154		800	330		1,130	1,375
1400	500 kcmil	▼	3.60	6.667		975	355		1,330	1,600
1600	15 kV, ungrounded neutral, #1	2 Elec	4	4		340	213		553	690
1800	1/0	▼	3.80	4.211	▼	405	225		630	780

26 05 Common Work Results for Electrical

26 05 13 – Medium-Voltage Cables

26 05 13.16 Medium-Voltage, Single Cable		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
2000	2/0	2 Elec	3.60	4.444	C.L.F.	460	237		697	860
2200	4/0	▼	3.20	5		610	267		877	1,075
2400	250 kcmil	3 Elec	4.50	5.333		675	285		960	1,175
2600	350 kcmil		3.90	6.154		855	330		1,185	1,425
2800	500 kcmil		3.60	6.667		1,050	355		1,405	1,675

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

26 05 19.20 Armored Cable

0010	ARMORED CABLE									
0050	600 volt, copper (BX), #14, 2 conductor, solid	1 Elec	2.40	3.333	C.L.F.	54	178		232	325
0100	3 conductor, solid		2.20	3.636		83.50	194		277.50	380
0150	#12, 2 conductor, solid		2.30	3.478		54.50	186		240.50	340
0200	3 conductor, solid		2	4		88.50	213		301.50	420
0250	#10, 2 conductor, solid		2	4		100	213		313	430
0300	3 conductor, solid		1.60	5		139	267		406	555
0340	#8, 2 conductor, stranded		1.50	5.333		262	285		547	715
0350	3 conductor, stranded		1.30	6.154		262	330		592	780
0400	3 conductor with PVC jacket, in cable tray, #6		3.10	2.581		455	138		593	705
0450	#4	2 Elec	5.40	2.963		565	158		723	855
0500	#2		4.60	3.478		710	186		896	1,075
0550	#1		4	4		940	213		1,153	1,350
0600	1/0		3.60	4.444		1,025	237		1,262	1,475
0650	2/0		3.40	4.706		1,250	251		1,501	1,750
0700	3/0		3.20	5		1,575	267		1,842	2,125
0750	4/0		3	5.333		1,825	285		2,110	2,450
0800	250 kcmil	3 Elec	3.60	6.667		2,100	355		2,455	2,825
0850	350 kcmil		3.30	7.273		2,825	390		3,215	3,675
0900	500 kcmil		3	8		3,800	425		4,225	4,825
1050	5 kV, copper, 3 conductor with PVC jacket, non-shielded, in cable tray, #4	2 Elec	380	.042	L.F.	7.35	2.25		9.60	11.40
1100	#2		360	.044		9.55	2.37		11.92	14.05
1200	#1		300	.053		12.15	2.85		15	17.60
1400	1/0		290	.055		14	2.94		16.94	19.80
1600	2/0		260	.062		16.20	3.28		19.48	23
2000	4/0		240	.067		21.50	3.56		25.06	29.50
2100	250 kcmil	3 Elec	330	.073		29.50	3.88		33.38	38.50
2150	350 kcmil		315	.076		36.50	4.06		40.56	46
2200	500 kcmil	▼	270	.089	▼	51	4.74		55.74	63
2400	15 kV, copper, 3 conductor with PVC jacket galv., steel armored									
2500	grounded neutral, in cable tray, #2	2 Elec	300	.053	L.F.	15.40	2.85		18.25	21
2600	#1		280	.057		16.40	3.05		19.45	22.50
2800	1/0		260	.062		18.75	3.28		22.03	25.50
2900	2/0		220	.073		25	3.88		28.88	33.50
3000	4/0		190	.084		28.50	4.49		32.99	37.50
3100	250 kcmil	3 Elec	270	.089		31.50	4.74		36.24	41.50
3150	350 kcmil		240	.100		37	5.35		42.35	49
3200	500 kcmil	▼	210	.114	▼	50	6.10		56.10	64
3400	15 kV, copper, 3 conductor with PVC jacket, ungrounded neutral, in cable tray, #2									
3450		2 Elec	260	.062	L.F.	16.60	3.28		19.88	23
3500	#1		230	.070		18.40	3.71		22.11	26
3600	1/0		200	.080		21	4.27		25.27	29.50
3700	2/0		190	.084		26	4.49		30.49	35
3800	4/0	▼	160	.100	▼	31	5.35		36.35	42.50

26 05 Common Work Results for Electrical

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

26 05 19.20 Armored Cable		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4000	250 kcmil	3 Elec	210	.114	L.F.	36.50	6.10		42.60	49
4050	350 kcmil		195	.123		48	6.55		54.55	62.50
4100	500 kcmil		180	.133		58.50	7.10		65.60	74.50
9010	600 volt, copper (MC) steel clad, #14, 2 wire	1 Elec	2.40	3.333	C.L.F.	55	178		233	325
9020	3 wire		2.20	3.636		85	194		279	385
9030	4 wire		2	4		118	213		331	450
9040	#12, 2 wire		2.30	3.478		55.50	186		241.50	340
9050	3 wire		2	4		94	213		307	425
9070	#10, 2 wire		2	4		116	213		329	450
9080	3 wire		1.60	5		162	267		429	580
9100	#8, 2 wire, stranded		1.80	4.444		223	237		460	600
9110	3 wire, stranded		1.30	6.154		315	330		645	835
9200	600 volt, copper (MC) aluminum clad, #14, 2 wire		2.65	3.019		53.50	161		214.50	300
9210	3 wire		2.45	3.265		83.50	174		257.50	355
9220	4 wire		2.20	3.636		117	194		311	420
9230	#12, 2 wire		2.55	3.137		55.50	167		222.50	310
9240	3 wire		2.20	3.636		92.50	194		286.50	390
9250	4 wire		2	4		125	213		338	460
9260	#10, 2 wire		2.20	3.636		115	194		309	415
9270	3 wire		1.80	4.444		161	237		398	530
9280	4 wire		1.55	5.161		253	275		528	690

26 05 19.35 Cable Terminations

0010	CABLE TERMINATIONS									
0015	Wire connectors, screw type, #22 to #14	1 Elec	260	.031	Eq.	.06	1.64		1.70	2.53
0020	#18 to #12		240	.033		.08	1.78		1.86	2.75
0025	#18 to #10		240	.033		.14	1.78		1.92	2.81
0030	Screw-on connectors, insulated, #18 to #12		240	.033		.22	1.78		2	2.90
0035	#16 to #10		230	.035		.25	1.86		2.11	3.06
0040	#14 to #8		210	.038		.30	2.03		2.33	3.37
0045	#12 to #6		180	.044		.62	2.37		2.99	4.23
0050	Terminal lugs, solderless, #16 to #10		50	.160		.37	8.55		8.92	13.20
0100	#8 to #4		30	.267		.73	14.25		14.98	22.50
0150	#2 to #1		22	.364		1.03	19.40		20.43	30
0200	1/0 to 2/0		16	.500		1.64	26.50		28.14	42
0250	3/0		12	.667		2.87	35.50		38.37	56
0300	4/0		11	.727		3.51	39		42.51	62
0350	250 kcmil		9	.889		3.41	47.50		50.91	75
0400	350 kcmil		7	1.143		4.44	61		65.44	96.50
0450	500 kcmil		6	1.333		8.20	71		79.20	115
1600	Crimp 1 hole lugs, copper or aluminum, 600 volt									
1620	#14	1 Elec	60	.133	Eq.	.60	7.10		7.70	11.30
1630	#12		50	.160		.92	8.55		9.47	13.80
1640	#10		45	.178		.92	9.50		10.42	15.20
1780	#8		36	.222		1.91	11.85		13.76	19.85
1800	#6		30	.267		2.48	14.25		16.73	24
2000	#4		27	.296		3.38	15.80		19.18	27
2200	#2		24	.333		5.30	17.80		23.10	32.50
2400	#1		20	.400		5.50	21.50		27	38
2500	1/0		17.50	.457		5.85	24.50		30.35	43
2600	2/0		15	.533		6.80	28.50		35.30	50
2800	3/0		12	.667		8	35.50		43.50	62
3000	4/0		11	.727		8.90	39		47.90	68

26 05 Common Work Results for Electrical

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

26 05 19.35 Cable Terminations		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3200	250 kcmil	1 Elec	9	.889	Eo.	10.50	47.50		58	82.50
3400	300 kcmil		8	1		12	53.50		65.50	93
3500	350 kcmil		7	1.143		13.60	61		74.60	106
3600	400 kcmil		6.50	1.231		15.10	65.50		80.60	115
3800	500 kcmil		6	1.333		17.70	71		88.70	125

26 05 19.50 Mineral Insulated Cable

0010	MINERAL INSULATED CABLE 600 volt									
0100	1 conductor, #12	1 Elec	1.60	5	C.L.F.	360	267		627	795
0200	#10		1.60	5		465	267		732	910
0400	#8		1.50	5.333		515	285		800	995
0500	#6	↓	1.40	5.714		615	305		920	1,125
0600	#4	2 Elec	2.40	6.667		825	355		1,180	1,450
0800	#2		2.20	7.273		1,175	390		1,565	1,850
0900	#1		2.10	7.619		1,350	405		1,755	2,075
1000	1/0		2	8		1,575	425		2,000	2,375
1100	2/0		1.90	8.421		1,875	450		2,325	2,750
1200	3/0		1.80	8.889		2,250	475		2,725	3,175
1400	4/0		1.60	10		2,600	535		3,135	3,675
1410	250 kcmil	3 Elec	2.40	10		2,950	535		3,485	4,025
1420	350 kcmil		1.95	12.308		3,350	655		4,005	4,675
1430	500 kcmil	↓	1.95	12.308	↓	4,325	655		4,980	5,725

26 05 19.55 Non-Metallic Sheathed Cable

0010	NON-METALLIC SHEATHED CABLE 600 volt									
0100	Copper with ground wire, (Romex)									
0150	#14, 2 conductor	1 Elec	2.70	2.963	C.L.F.	25.50	158		183.50	265
0200	3 conductor		2.40	3.333		35.50	178		213.50	305
0220	4 conductor		2.20	3.636		51	194		245	345
0250	#12, 2 conductor		2.50	3.200		38.50	171		209.50	299
0300	3 conductor		2.20	3.636		54	194		248	350
0320	4 conductor		2	4		79.50	213		292.50	410
0350	#10, 2 conductor		2.20	3.636		60	194		254	355
0400	3 conductor		1.80	4.444		85.50	237		322.50	450
0430	#8, 2 conductor		1.60	5		94.50	267		361.50	505
0450	3 conductor		1.50	5.333		138	285		423	575
0500	#6, 3 conductor	↓	1.40	5.714	↓	224	305		529	700
0550	SE type SER aluminum cable, 3 RHW and									
0600	1 bare neutral, 3 #8 & 1 #8	1 Elec	1.60	5	C.L.F.	137	267		404	550
0650	3 #6 & 1 #6	"	1.40	5.714		156	305		461	625
0700	3 #4 & 1 #6	2 Elec	2.40	6.667		144	355		499	690
0750	3 #2 & 1 #4		2.20	7.273		257	390		647	860
0800	3 #1/0 & 1 #2		2	8		390	425		815	1,075
0850	3 #2/0 & 1 #1		1.80	8.889		460	475		935	1,225
0900	3 #4/0 & 1 #2/0	↓	1.60	10	↓	655	535		1,190	1,525

26 05 19.90 Wire

0010	WIRE	R260519-92								
0020	600 volt, copper type THW, solid, #14	1 Elec	13	.615	C.L.F.	8.30	33		41.30	58
0030	#12		11	.727		12.50	39		51.50	72
0040	#10		10	.800		19.80	42.50		62.30	86
0050	Stranded, #14	R260533-22								
0100	#12		11	.727		14.45	39		53.45	74
0120	#10		10	.800		23	42.50		65.50	89
0140	#8	↓	8	1	↓	37.50	53.50		91	122

26 05 Common Work Results for Electrical

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

26 05 19.90 Wire		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0160	#6	1 Elec	6.50	1.231	C.L.F.	64	65.50		129.50	169
0180	#4	2 Elec	10.60	1.509		101	80.50		181.50	232
0200	#3		10	1.600		126	85.50		211.50	267
0220	#2		9	1.778		160	95		255	320
0240	#1		8	2		202	107		309	380
0260	1/0		6.60	2.424		251	129		380	470
0280	2/0		5.80	2.759		315	147		462	565
0300	3/0		5	3.200		395	171		566	690
0350	4/0		4.40	3.636		505	194		699	845
0400	250 kcmil	3 Elec	6	4		590	213		803	970
0420	300 kcmil		5.70	4.211		705	225		930	1,100
0450	350 kcmil		5.40	4.444		860	237		1,097	1,300
0480	400 kcmil		5.10	4.706		990	251		1,241	1,475
0490	500 kcmil	▼	4.80	5		1,175	267		1,442	1,675
0540	600 volt, aluminum type THHN, stranded, #6	1 Elec	8	1		37.50	53.50		91	121
0560	#4	2 Elec	13	1.231		46.50	65.50		112	150
0580	#2		10.60	1.509		63	80.50		143.50	190
0600	#1		9	1.778		92	95		187	243
0620	1/0		8	2		110	107		217	281
0640	2/0		7.20	2.222		130	119		249	320
0680	3/0		6.60	2.424		162	129		291	370
0700	4/0	▼	6.20	2.581		180	138		318	405
0720	250 kcmil	3 Elec	8.70	2.759		219	147		366	460
0740	300 kcmil		8.10	2.963		305	158		463	570
0760	350 kcmil		7.50	3.200		310	171		481	595
0780	400 kcmil		6.90	3.478		360	186		546	675
0800	500 kcmil		6	4		395	213		608	755
0850	600 kcmil		5.70	4.211		505	225		730	890
0880	700 kcmil		5.10	4.706		580	251		831	1,025
0900	750 kcmil		4.80	5		600	267		867	1,050
0910	1000 kcmil	▼	3.78	6.349		890	340		1,230	1,475
0920	600 volt, copper type THWN-THHN, solid, #14	1 Elec	13	.615		8.95	33		41.95	59
0940	#12		11	.727		13.55	39		52.55	73
0960	#10		10	.800		21.50	42.50		64	87.50
1000	Stranded, #14		13	.615		10.25	33		43.25	60.50
1200	#12		11	.727		15.70	39		54.70	75.50
1250	#10		10	.800		24.50	42.50		67	90.50
1300	#8		8	1		38	53.50		91.50	122
1350	#6	▼	6.50	1.231		65	65.50		130.50	170
1400	#4	2 Elec	10.60	1.509	▼	103	80.50		183.50	234

26 05 23 – Control-Voltage Electrical Power Cables

26 05 23.10 Control Cable

0010	CONTROL CABLE									
0020	600 volt, copper, #14 THWN wire with PVC jacket, 2 wires	1 Elec	9	.889	C.L.F.	26.50	47.50		74	100
0030	3 wires		8	1		37	53.50		90.50	121
0100	4 wires		7	1.143		45.50	61		106.50	142
0150	5 wires		6.50	1.231		56	65.50		121.50	160
0200	6 wires		6	1.333		85.50	71		156.50	200
0300	8 wires		5.30	1.509		98	80.50		178.50	229
0400	10 wires		4.80	1.667		123	89		212	269
0500	12 wires		4.30	1.860		144	99.50		243.50	305
0600	14 wires	▼	3.80	2.105		172	112		284	355

26 05 Common Work Results for Electrical

26 05 23 – Control-Voltage Electrical Power Cables

26 05 23.10 Control Cable		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0700	16 wires	1 Elec	3.50	2.286	C.L.F.	177	122		299	380
0800	18 wires		3.30	2.424		193	129		322	405
0810	19 wires		3.10	2.581		218	138		356	445
0900	20 wires		3	2.667		236	142		378	475
1000	22 wires		2.80	2.857		243	152		395	495

26 05 26 – Grounding and Bonding for Electrical Systems

26 05 26.80 Grounding

0010	GROUNDING									
0030	Rad, copper clad, 8' long, 1/2" diameter	1 Elec	5.50	1.455	Ea.	20.50	77.50		98	139
0050	3/4" diameter		5.30	1.509		34	80.50		114.50	159
0080	10' long, 1/2" diameter		4.80	1.667		22.50	89		111.50	158
0100	3/4" diameter		4.40	1.818		39	97		136	188
0130	15' long, 3/4" diameter		4	2		63.50	107		170.50	230
0390	Bare copper wire, stranded, #8		11	.727	C.L.F.	35	39		74	96.50
0400	#6		10	.800		61	42.50		103.50	131
0600	#2	2 Elec	10	1.600		162	85.50		247.50	305
0800	3/0		6.60	2.424		365	129		494	600
1000	4/0		5.70	2.807		460	150		610	730
1200	250 kcmil	3 Elec	7.20	3.333		545	178		723	865
1800	Water pipe ground clamps, heavy duty									
2000	Brnze, 1/2" to 1" diameter	1 Elec	8	1	Ea.	23.50	53.50		77	106
2100	1-1/4" to 2" diameter		8	1		32.50	53.50		86	116
2200	2-1/2" to 3" diameter		6	1.333		49	71		120	160
2800	Brazed connections, #6 wire		12	.667		16	35.50		51.50	70.50
3000	#2 wire		10	.800		21.50	42.50		64	87.50
3100	3/0 wire		8	1		32	53.50		85.50	116
3200	4/0 wire		7	1.143		37	61		98	132
3400	250 kcmil wire		5	1.600		43	85.50		128.50	175
3600	500 kcmil wire		4	2		53	107		160	218

26 05 33 – Raceway and Boxes for Electrical Systems

26 05 33.13 Conduit

0010	CONDUIT Ta 15' high, includes 2 terminations, 2 elbows, R260533-22									
0020	11 beam clamps, and 11 couplings per 100 L.F.									
0300	Aluminum, 1/2" diameter	1 Elec	100	.080	L.F.	1.83	4.27		6.10	8.40
0500	3/4" diameter		90	.089		2.46	4.74		7.20	9.80
0700	1" diameter		80	.100		3.53	5.35		8.88	11.90
1000	1-1/4" diameter		70	.114		4.35	6.10		10.45	13.95
1030	1-1/2" diameter		65	.123		5.50	6.55		12.05	15.90
1050	2" diameter		60	.133		7.80	7.10		14.90	19.20
1070	2-1/2" diameter		50	.160		11.40	8.55		19.95	25.50
1100	3" diameter	2 Elec	90	.178		15.95	9.50		25.45	32
1130	3-1/2" diameter		80	.200		20.50	10.65		31.15	38.50
1140	4" diameter		70	.229		25	12.20		37.20	46
1750	Rigid galvanized steel, 1/2" diameter	1 Elec	90	.089		2.40	4.74		7.14	9.75
1770	3/4" diameter		80	.100		2.56	5.35		7.91	10.80
1800	1" diameter		65	.123		3.69	6.55		10.24	13.90
1830	1-1/4" diameter		60	.133		4.84	7.10		11.94	16
1850	1-1/2" diameter		55	.145		5.75	7.75		13.50	17.90
1870	2" diameter		45	.178		7.45	9.50		16.95	22.50
1900	2-1/2" diameter		35	.229		13.30	12.20		25.50	33
1930	3" diameter	2 Elec	50	.320		15.50	17.05		32.55	42.50
1950	3-1/2" diameter		44	.364		19.45	19.40		38.85	50.50

26 05 Common Work Results for Electrical

26 05 33 – Raceway and Boxes for Electrical Systems

26 05 33.13 Conduit		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1970	4" diameter	2 Elec	40	.400	L.F.	23	21.50		44.50	57
2500	Steel, intermediate conduit (IMC), 1/2" diameter	1 Elec	100	.080		1.72	4.27		5.99	8.30
2530	3/4" diameter		90	.089		2.06	4.74		6.80	9.35
2550	1" diameter		70	.114		3.04	6.10		9.14	12.50
2570	1-1/4" diameter		65	.123		3.73	6.55		10.28	13.95
2600	1-1/2" diameter		60	.133		4.92	7.10		12.02	16.05
2630	2" diameter		50	.160		5.95	8.55		14.50	19.30
2650	2-1/2" diameter	▼	40	.200		10.60	10.65		21.25	27.50
2670	3" diameter	2 Elec	60	.267		14.50	14.25		28.75	37.50
2700	3-1/2" diameter		54	.296		19.15	15.80		34.95	44.50
2730	4" diameter	▼	50	.320		21	17.05		38.05	48.50
5000	Electric metallic tubing (EMT), 1/2" diameter	1 Elec	170	.047		.56	2.51		3.07	4.38
5020	3/4" diameter		130	.062		.86	3.28		4.14	5.85
5040	1" diameter		115	.070		1.48	3.71		5.19	7.20
5060	1-1/4" diameter		100	.080		2.45	4.27		6.72	9.10
5080	1-1/2" diameter		90	.089		3.16	4.74		7.90	10.60
5100	2" diameter		80	.100		4.02	5.35		9.37	12.40
5120	2-1/2" diameter	▼	60	.133		9.55	7.10		16.65	21
5140	3" diameter	2 Elec	100	.160		11.05	8.55		19.60	25
5160	3-1/2" diameter		90	.178		14	9.50		23.50	29.50
5180	4" diameter	▼	80	.200		15.35	10.65		26	33
9900	Add to labor for higher elevated installation									
9910	15' to 20' high, add						10%			
9920	20' to 25' high, add						20%			
9930	25' to 30' high, add						25%			
9940	30' to 35' high, add						30%			
9950	35' to 40' high, add						35%			
9960	Over 40' high, add						40%			
9980	Allowance for conduit fittings 5% min.-20% max.									

26 05 33.16 Outlet Boxes

0010	OUTLET BOXES									
0020	Pressed steel, octagon, 4"	1 Elec	20	.400	Ea.	3.07	21.50		24.57	35.50
0060	Covers, blank		64	.125		1.29	6.65		7.94	11.40
0100	Extension rings		40	.200		5.10	10.65		15.75	21.50
0150	Square, 4"		20	.400		2.10	21.50		23.60	34.50
0200	Extension rings		40	.200		5.15	10.65		15.80	21.50
0250	Covers, blank		64	.125		1.39	6.65		8.04	11.55
0300	Plaster rings		64	.125		2.83	6.65		9.48	13.10
0650	Switchbox		27	.296		4.91	15.80		20.71	29
1100	Concrete, floor, 1 gang		5.30	1.509		89	80.50		169.50	219
2000	Pake-thru fitting, fire rated, for 3-3/4" floor		6.80	1.176		129	63		192	235
2040	For 7" floor		6.80	1.176		143	63		206	251
2100	Pedestal, 15 amp, duplex receptacle & blank plate		5.25	1.524		136	81.50		217.50	272
2120	Duplex receptacle and telephone plate		5.25	1.524		136	81.50		217.50	272
2140	Pedestal, 20 amp, duplex recept. & phane plate		5	1.600		137	85.50		222.50	279
2200	Abandonment plate	▼	32	.250	▼	38	13.35		51.35	62

26 05 33.18 Pull Boxes

0010	PULL BOXES									
0100	Sheet metal, pull box, NEMA 1, type SC, 6" W x 6" H x 4" D	1 Elec	8	1	Ea.	10.75	53.50		64.25	92
0200	8" W x 8" H x 4" D		8	1		15.30	53.50		68.80	97
0300	10" W x 12" H x 6" D		5.30	1.509		29	80.50		109.50	153
0400	16" W x 20" H x 8" D	▼	4	2	▼	86	107		193	255

26 05 Common Work Results for Electrical

26 05 33 – Raceway and Boxes for Electrical Systems

26 05 33.18 Pull Boxes		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0500	20" W x 24" H x 8" D	1 Elec	3.20	2.500	Ea.	97.50	133		230.50	305
0600	24" W x 36" H x 8" D		2.70	2.963		140	158		298	390
0650	Pull box, hinged, NEMA 1, 6" W x 6" H x 4" D		8	1		10.90	53.50		64.40	92
0800	12" W x 16" H x 6" D		4.70	1.702		43	91		134	184
1000	20" W x 20" H x 6" D		3.60	2.222		74.50	119		193.50	259
1200	20" W x 20" H x 8" D		3.20	2.500		148	133		281	365
1400	24" W x 36" H x 8" D		2.70	2.963		228	158		386	490
1600	24" W x 42" H x 8" D		2	4		345	213		558	700
2100	Pull box, NEMA 3R, type SC, raintight & weatherproof									
2150	6" L x 6" W x 6" D	1 Elec	10	.800	Ea.	18.85	42.50		61.35	84.50
2200	8" L x 6" W x 6" D		8	1		28	53.50		81.50	111
2250	10" L x 6" W x 6" D		7	1.143		37	61		98	132
2300	12" L x 12" W x 6" D		5	1.600		44	85.50		129.50	177
2350	16" L x 16" W x 6" D		4.50	1.778		115	95		210	268
2400	20" L x 20" W x 6" D		4	2		142	107		249	315
2450	24" L x 18" W x 8" D		3	2.667		125	142		267	350
2500	24" L x 24" W x 10" D		2.50	3.200		161	171		332	435
2550	30" L x 24" W x 12" D		2	4		380	213		593	735
2600	36" L x 36" W x 12" D		1.50	5.333		430	285		715	895
2800	Cast iron, pull boxes for surface mounting									
3000	NEMA 4, watertight & dust tight									
3050	6" L x 6" W x 6" D	1 Elec	4	2	Ea.	248	107		355	430
3100	8" L x 6" W x 6" D		3.20	2.500		345	133		478	580
3150	10" L x 6" W x 6" D		2.50	3.200		385	171		556	680
3200	12" L x 12" W x 6" D		2.30	3.478		705	186		891	1,050
3250	16" L x 16" W x 6" D		1.30	6.154		1,125	330		1,455	1,750
3300	20" L x 20" W x 6" D		.80	10		2,100	535		2,635	3,125
3350	24" L x 18" W x 8" D		.70	11.429		2,600	610		3,210	3,800
3400	24" L x 24" W x 10" D		.50	16		4,925	855		5,780	6,700
3450	30" L x 24" W x 12" D		.40	20		9,025	1,075		10,100	11,500
3500	36" L x 36" W x 12" D		.20	40		7,025	2,125		9,150	10,900
6000	J.I.C. wiring boxes, NEMA 12, dust tight & drip tight									
6050	6" L x 8" W x 4" D	1 Elec	10	.800	Ea.	51.50	42.50		94	121
6100	8" L x 10" W x 4" D		8	1		64	53.50		117.50	151
6150	12" L x 14" W x 6" D		5.30	1.509		109	80.50		189.50	240
6200	14" L x 16" W x 6" D		4.70	1.702		127	91		218	276
6250	16" L x 20" W x 6" D		4.40	1.818		224	97		321	390
6300	24" L x 30" W x 6" D		3.20	2.500		330	133		463	560
6350	24" L x 30" W x 8" D		2.90	2.759		355	147		502	610
6400	24" L x 36" W x 8" D		2.70	2.963		390	158		548	665
6450	24" L x 42" W x 8" D		2.30	3.478		425	186		611	750
6500	24" L x 48" W x 8" D		2	4		465	213		678	830

26 05 33.23 Wireway

0010	WIREWAY to 15' high									
0100	NEMA 1, Screw cover w/fittings and supports, 2-1/2" x 2-1/2"	1 Elec	45	.178	L.F.	10.35	9.50		19.85	25.50
0200	4" x 4"	"	40	.200		11.50	10.65		22.15	28.50
0400	6" x 6"	2 Elec	60	.267		19.50	14.25		33.75	43
0600	8" x 8"	"	40	.400		28	21.50		49.50	63
4475	NEMA 3R, Screw cover w/fittings and supports, 4" x 4"	1 Elec	36	.222		19.45	11.85		31.30	39.50
4480	6" x 6"	2 Elec	55	.291		26	15.50		41.50	51.50
4485	8" x 8"		36	.444		40	23.50		63.50	79.50
4490	12" x 12"		18	.889		64	47.50		111.50	142

26 05 Common Work Results for Electrical

26 05 33 – Raceway and Boxes for Electrical Systems

26 05 33.23 Wireway		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
9980	Allow. for wireway ftngs., 5% min.-20% max.						Labor	Equipment		

26 05 36 – Cable Trays for Electrical Systems

26 05 36.10 Cable Tray Ladder Type

0010	CABLE TRAY LADDER TYPE w/ftngs. & supports, 4" dp., to 15' elev.									
0160	Galvanized steel tray									
0170	4" rung spacing, 6" wide	2 Elec	98	.163	L.F.	17.95	8.70		26.65	33
0200	12" wide		86	.186		21.50	9.95		31.45	38.50
0400	18" wide		82	.195		25	10.40		35.40	43
0600	24" wide		78	.205		29	10.95		39.95	48.50
3200	Aluminum tray, 4" deep, 6" rung spacing, 6" wide		134	.119		17.80	6.35		24.15	29
3220	12" wide		124	.129		19.95	6.90		26.85	32.50
3230	18" wide		114	.140		22	7.50		29.50	35.50
3240	24" wide		106	.151		26	8.05		34.05	40.50
9980	Allow. for tray ftngs., 5% min.-20% max.									

26 05 39 – Underfloor Raceways for Electrical Systems

26 05 39.30 Conduit in Concrete Slab

0010	CONDUIT IN CONCRETE SLAB Including terminations,									
0020	fittings and supports									
3230	PVC, schedule 40, 1/2" diameter	1 Elec	270	.030	L.F.	.64	1.58		2.22	3.07
3250	3/4" diameter		230	.035		.75	1.86		2.61	3.60
3270	1" diameter		200	.040		.94	2.13		3.07	4.23
3300	1-1/4" diameter		170	.047		1.36	2.51		3.87	5.25
3330	1-1/2" diameter		140	.057		1.63	3.05		4.68	6.35
3350	2" diameter		120	.067		2.07	3.56		5.63	7.55
4350	Rigid galvanized steel, 1/2" diameter		200	.040		2.31	2.13		4.44	5.75
4400	3/4" diameter		170	.047		2.44	2.51		4.95	6.45
4450	1" diameter		130	.062		3.36	3.28		6.64	8.60
4500	1-1/4" diameter		110	.073		4.59	3.88		8.47	10.85
4600	1-1/2" diameter		100	.080		5.15	4.27		9.42	12.05
4800	2" diameter		90	.089		6.40	4.74		11.14	14.15

26 05 39.40 Conduit in Trench

0010	CONDUIT IN TRENCH Includes terminations and fittings									
0020	Does not include excavation or backfill, see Section 31 23 16.00									
0200	Rigid galvanized steel, 2" diameter	1 Elec	150	.053	L.F.	6	2.85		8.85	10.85
0400	2-1/2" diameter	"	100	.080		11.75	4.27		16.02	19.35
0600	3" diameter	2 Elec	160	.100		13.90	5.35		19.25	23.50
0800	3-1/2" diameter		140	.114		18.35	6.10		24.45	29
1000	4" diameter		100	.160		20.50	8.55		29.05	35.50
1200	5" diameter		80	.200		42.50	10.65		53.15	63
1400	6" diameter		60	.267		62.50	14.25		76.75	90.50

26 05 43 – Underground Ducts and Raceways for Electrical Systems

26 05 43.10 Trench Duct

0010	TRENCH DUCT Steel with cover									
0020	Standard adjustable, depths to 4"									
0100	Straight, single compartment, 9" wide	2 Elec	40	.400	L.F.	116	21.50		137.50	160
0200	12" wide		32	.500		133	26.50		159.50	186
0400	18" wide		26	.615		163	33		196	228
0600	24" wide		22	.727		195	39		234	272
0800	30" wide		20	.800		226	42.50		268.50	315
1000	36" wide		16	1		259	53.50		312.50	365
1200	Horizontal elbow, 9" wide		5.40	2.963	Eq.	380	158		538	655

26 05 Common Work Results for Electrical

26 05 43 – Underground Ducts and Raceways for Electrical Systems

26 05 43.10 Trench Duct

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
1400	12" wide	2 Elec	4.60	3.478	Eo.	440	186		626	765
1600	18" wide		4	4		565	213		778	940
1800	24" wide		3.20	5		795	267		1,062	1,275
2000	30" wide		2.60	6.154		1,050	330		1,380	1,675
2200	36" wide		2.40	6.667		1,400	355		1,755	2,050
2400	Vertical elbow, 9" wide		5.40	2.963		134	158		292	385
2600	12" wide		4.60	3.478		145	186		331	435
2800	18" wide		4	4		166	213		379	505
3000	24" wide		3.20	5		207	267		474	625
3200	30" wide		2.60	6.154		228	330		558	740
3400	36" wide		2.40	6.667		251	355		606	805
3600	Cross, 9" wide		4	4		625	213		838	1,000
3800	12" wide		3.20	5		665	267		932	1,125
4000	18" wide		2.60	6.154		795	330		1,125	1,375
4200	24" wide		2.20	7.273		1,000	390		1,390	1,675
4400	30" wide		2	8		1,300	425		1,725	2,100
4600	36" wide		1.80	8.889		1,625	475		2,100	2,500
4800	End closure, 9" wide		14.40	1.111		39	59.50		98.50	132
5000	12" wide		12	1.333		45	71		116	156
5200	18" wide		10	1.600		68.50	85.50		154	204
5400	24" wide		8	2		90.50	107		197.50	260
5600	30" wide		6.60	2.424		113	129		242	320
5800	36" wide		5.80	2.759		135	147		282	370
6000	Tees, 9" wide		4	4		380	213		593	740
6200	12" wide		3.60	4.444		440	237		677	840
6400	18" wide		3.20	5		565	267		832	1,025
6600	24" wide		3	5.333		815	285		1,100	1,325
6800	30" wide		2.60	6.154		1,050	330		1,380	1,675
7000	36" wide		2	8		1,400	425		1,825	2,175
7200	Riser, and cabinet connector, 9" wide		5.40	2.963		166	158		324	420
7400	12" wide		4.60	3.478		194	186		380	490
7600	18" wide		4	4		238	213		451	580
7800	24" wide		3.20	5		289	267		556	715
8000	30" wide		2.60	6.154		330	330		660	855
8200	36" wide		2	8		385	425		810	1,075
8400	Insert assembly, cell to conduit adapter, 1-1/4"	1 Elec	16	.500	▼	66	26.50		92.50	113

26 05 43.20 Underfloor Duct

0010	UNDERFLOOR DUCT									
0100	Duct, 1-3/8" x 3-1/8" blank, standard	2 Elec	160	.100	L.F.	14.10	5.35		19.45	23.50
0200	1-3/8" x 7-1/4" blank, super duct		120	.133		28	7.10		35.10	41.50
0400	7/8" or 1-3/8" insert type, 24" O.C., 1-3/8" x 3-1/8", std.		140	.114		18.85	6.10		24.95	30
0600	1-3/8" x 7-1/4", super duct	▼	100	.160	▼	33	8.55		41.55	49.50
0800	Junction box, single duct, 1 level, 3-1/8"	1 Elec	4	2	Eo.	425	107		532	625
1000	Junction box, single duct, 1 level, 7-1/4"		2.70	2.963		495	158		653	775
1200	1 level, 2 duct, 3-1/8"		3.20	2.500		565	133		698	820
1400	Junction box, 1 level, 2 duct, 7-1/4"		2.30	3.478		1,450	186		1,636	1,875
1580	Junction box, 1 level, one 3-1/8" + one 7-1/4" x some		2.30	3.478		960	186		1,146	1,325
1600	Triple duct, 3-1/8"		2.30	3.478		960	186		1,146	1,325
1800	Insert to conduit adapter, 3/4" & 1"		32	.250		34.50	13.35		47.85	58
2000	Support, single cell		27	.296		52	15.80		67.80	81
2200	Super duct		16	.500		52	26.50		78.50	97.50
2400	Double cell	▼	16	.500	▼	52	26.50		78.50	97.50

26 05 Common Work Results for Electrical

26 05 43 – Underground Ducts and Raceways for Electrical Systems

26 05 43.20 Underfloor Duct		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2600	Triple cell	1 Elec	11	.727	Ea.	52	39		91	116
2800	Vertical elbow, standard duct		10	.800		93.50	42.50		136	167
3000	Super duct		8	1		93.50	53.50		147	183
3200	Cabinet connector, standard duct		32	.250		70.50	13.35		83.85	97.50
3400	Super duct		27	.296		70.50	15.80		86.30	101
3600	Conduit adapter, 1" to 1-1/4"		32	.250		70.50	13.35		83.85	97.50
3800	2" to 1-1/4"		27	.296		84.50	15.80		100.30	117
4000	Outlet, low tension (tele, computer, etc.)		8	1		98.50	53.50		152	188
4200	High tension, receptacle (120 volt)		8	1		98.50	53.50		152	188

26 05 80 – Wiring Connections

26 05 80.10 Motor Connections

0010	MOTOR CONNECTIONS									
0020	Flexible conduit and fittings, 115 volt, 1 phase, up to 1 HP motor	1 Elec	8	1	Eo.	7.25	53.50		60.75	88
0110	230 volt, 3 phase, 3 HP motor		6.78	1.180		8.70	63		71.70	104
0112	5 HP motor		5.47	1.463		7.40	78		85.40	125
0114	7-1/2 HP motor		4.61	1.735		10.50	92.50		103	151
0120	10 HP motor		4.20	1.905		23.50	102		125.50	178
0200	25 HP motor		2.70	2.963		33.50	158		191.50	274
0400	50 HP motor		2.20	3.636		67	194		261	365
0600	100 HP motor		1.50	5.333		158	285		443	600

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring

0010	RESIDENTIAL WIRING									
0020	20' avg. runs and #14/2 wiring incl. unless otherwise noted									
1000	Service & panel, includes 24' SE-AL cable, service eye, meter,									
1010	Socket, panel board, main bkr., ground rod, 15 or 20 amp									
1020	1-pole circuit breakers, and misc. hardware									
1100	100 amp, with 10 branch breakers	1 Elec	1.19	6.723	Eo.	540	360		900	1,125
1110	With PVC conduit and wire		.92	8.696		595	465		1,060	1,350
1120	With RGS conduit and wire		.73	10.959		740	585		1,325	1,700
1150	150 amp, with 14 branch breakers		1.03	7.767		840	415		1,255	1,550
1170	With PVC conduit and wire		.82	9.756		955	520		1,475	1,825
1180	With RGS conduit and wire		.67	11.940		1,225	635		1,860	2,300
1200	200 amp, with 18 branch breakers	2 Elec	1.80	8.889		1,125	475		1,600	1,925
1220	With PVC conduit and wire		1.46	10.959		1,225	585		1,810	2,225
1230	With RGS conduit and wire		1.24	12.903		1,600	690		2,290	2,775
1800	Lightning surge suppressor	1 Elec	32	.250		50.50	13.35		63.85	76
2000	Switch devices									
2100	Single pole, 15 amp, Ivory, with 1-gang box, cover plate,									
2110	Type NM (Romex) cable	1 Elec	17.10	.468	Eo.	12.30	25		37.30	51
2120	Type MC (BX) cable		14.30	.559		23.50	30		53.50	70.50
2130	EMT & wire		5.71	1.401		29.50	75		104.50	145
2150	3-way, #14/3, type NM cable		14.55	.550		15.60	29.50		45.10	61
2170	Type MC cable		12.31	.650		31	34.50		65.50	86
2180	EMT & wire		5	1.600		32.50	85.50		118	164
2200	4-way, #14/3, type NM cable		14.55	.550		22.50	29.50		52	68.50
2220	Type MC cable		12.31	.650		37.50	34.50		72	93.50
2230	EMT & wire		5	1.600		39.50	85.50		125	172
2250	S.P., 20 amp, #12/2, type NM cable		13.33	.600		21	32		53	71.50
2270	Type MC cable		11.43	.700		30	37.50		67.50	89
2280	EMT & wire		4.85	1.649		40	88		128	176
2290	S.P. rotary dimmer, 600W, no wiring		17	.471		27	25		52	67

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2300	S.P. rotary dimmer, 600W, type NM cable	1 Elec	14.55	.550	Ea.	32	29.50		61.50	79
2320	Type MC cable		12.31	.650		43.50	34.50		78	99.50
2330	EMT & wire		5	1.600		51	85.50		136.50	184
2350	3-way rotary dimmer, type NM cable		13.33	.600		31.50	32		63.50	82.50
2370	Type MC cable		11.43	.700		42.50	37.50		80	103
2380	EMT & wire		4.85	1.649		50	88		138	187
2400	Interval timer wall switch, 20 amp, 1-30 min., #12/2									
2410	Type NM cable	1 Elec	14.55	.550	Ea.	54	29.50		83.50	104
2420	Type MC cable		12.31	.650		59	34.50		93.50	117
2430	EMT & wire		5	1.600		73	85.50		158.50	209
2500	Decorative style									
2510	S.P., 15 amp, type NM cable	1 Elec	17.10	.468	Ea.	16.15	25		41.15	55.50
2520	Type MC cable		14.30	.559		27.50	30		57.50	74.50
2530	EMT & wire		5.71	1.401		33.50	75		108.50	149
2550	3-way, #14/3, type NM cable		14.55	.550		19.40	29.50		48.90	65.50
2570	Type MC cable		12.31	.650		34.50	34.50		69	90
2580	EMT & wire		5	1.600		36.50	85.50		122	168
2600	4-way, #14/3, type NM cable		14.55	.550		26.50	29.50		56	73
2620	Type MC cable		12.31	.650		41.50	34.50		76	97.50
2630	EMT & wire		5	1.600		43	85.50		128.50	176
2650	S.P., 20 amp, #12/2, type NM cable		13.33	.600		25	32		57	75.50
2670	Type MC cable		11.43	.700		34	37.50		71.50	93
2680	EMT & wire		4.85	1.649		44	88		132	180
2700	S.P., slide dimmer, type NM cable		17.10	.468		32	25		57	73
2720	Type MC cable		14.30	.559		43.50	30		73.50	92.50
2730	EMT & wire		5.71	1.401		51	75		126	168
2750	S.P., touch dimmer, type NM cable		17.10	.468		29.50	25		54.50	69.50
2770	Type MC cable		14.30	.559		40.50	30		70.50	89
2780	EMT & wire		5.71	1.401		48	75		123	165
2800	3-way touch dimmer, type NM cable		13.33	.600		51.50	32		83.50	105
2820	Type MC cable		11.43	.700		63	37.50		100.50	125
2830	EMT & wire		4.85	1.649		70.50	88		158.50	210
3000	Combination devices									
3100	S.P. switch/15 amp recept., ivory, 1-gang box, plate									
3110	Type NM cable	1 Elec	11.43	.700	Ea.	24	37.50		61.50	82.50
3120	Type MC cable		10	.800		35.50	42.50		78	103
3130	EMT & wire		4.40	1.818		43	97		140	192
3150	S.P. switch/pilot light, type NM cable		11.43	.700		24	37.50		61.50	82.50
3170	Type MC cable		10	.800		35.50	42.50		78	103
3180	EMT & wire		4.43	1.806		43	96.50		139.50	192
3190	2-S.P. switches, 2-#14/2, no wiring		14	.571		6.95	30.50		37.45	53
3200	2-S.P. switches, 2-#14/2, type NM cables		10	.800		27.50	42.50		70	94.50
3220	Type MC cable		8.89	.900		44.50	48		92.50	121
3230	EMT & wire		4.10	1.951		46.50	104		150.50	207
3250	3-way switch/15 amp recept., #14/3, type NM cable		10	.800		31.50	42.50		74	98.50
3270	Type MC cable		8.89	.900		46.50	48		94.50	123
3280	EMT & wire		4.10	1.951		48	104		152	209
3300	2-3 way switches, 2-#14/3, type NM cables		8.89	.900		41	48		89	117
3320	Type MC cable		8	1		66	53.50		119.50	153
3330	EMT & wire		4	2		56	107		163	222
3350	S.P. switch/20 amp recept., #12/2, type NM cable		10	.800		32	42.50		74.50	99.50
3370	Type MC cable		8.89	.900		37	48		85	113
3380	EMT & wire		4.10	1.951		51	104		155	212

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3400	Decoratar style									
3410	S.P. switch/15 amp recpt., type NM cable	1 Elec	11.43	.700	Ea.	28	37.50		65.50	86.50
3420	Type MC cable		10	.800		39	42.50		81.50	107
3430	EMT & wire		4.40	1.818		46.50	97		143.50	197
3450	S.P. switch/pilot light, type NM cable		11.43	.700		28	37.50		65.50	87
3470	Type MC cable		10	.800		39.50	42.50		82	108
3480	EMT & wire		4.40	1.818		47	97		144	197
3500	2-S.P. switches, 2-#14/2, type NM cables		10	.800		31.50	42.50		74	98.50
3520	Type MC cable		8.89	.900		48.50	48		96.50	125
3530	EMT & wire		4.10	1.951		50	104		154	211
3550	3-way/15 amp recpt., #14/3, type NM cable		10	.800		35	42.50		77.50	103
3570	Type MC cable		8.89	.900		50.50	48		98.50	128
3580	EMT & wire		4.10	1.951		52	104		156	213
3650	2-3 way switches, 2-#14/3, type NM cables		8.89	.900		45	48		93	122
3670	Type MC cable		8	1		69.50	53.50		123	157
3680	EMT & wire		4	2		59.50	107		166.50	226
3700	S.P. switch/20 amp recpt., #12/2, type NM cable		10	.800		36	42.50		78.50	104
3720	Type MC cable		8.89	.900		41	48		89	117
3730	EMT & wire	▼	4.10	1.951	▼	55	104		159	216
4000	Receptacle devices									
4010	Duplex outlet, 15 amp recpt., Ivory, 1-gang box, plate									
4015	Type NM cable	1 Elec	14.55	.550	Ea.	11	29.50		40.50	56
4020	Type MC cable		12.31	.650		22.50	34.50		57	76.50
4030	EMT & wire		5.33	1.501		28	80		108	151
4050	With #12/2, type NM cable		12.31	.650		13.65	34.50		48.15	67
4070	Type MC cable		10.67	.750		22.50	40		62.50	84.50
4080	EMT & wire		4.71	1.699		32.50	90.50		123	172
4100	20 amp recpt., #12/2, type NM cable		12.31	.650		21	34.50		55.50	75
4120	Type MC cable		10.67	.750		29.50	40		69.50	92.50
4130	EMT & wire	▼	4.71	1.699	▼	39.50	90.50		130	180
4140	Far GFI see Section 26 05 90.10 line 4300 below									
4150	Decoratar style, 15 amp recpt., type NM cable	1 Elec	14.55	.550	Ea.	14.80	29.50		44.30	60.50
4170	Type MC cable		12.31	.650		26	34.50		60.50	80.50
4180	EMT & wire		5.33	1.501		32	80		112	155
4200	With #12/2, type NM cable		12.31	.650		17.45	34.50		51.95	71
4220	Type MC cable		10.67	.750		26	40		66	89
4230	EMT & wire		4.71	1.699		36	90.50		126.50	176
4250	20 amp recpt. #12/2, type NM cable		12.31	.650		24.50	34.50		59	79
4270	Type MC cable		10.67	.750		33.50	40		73.50	96.50
4280	EMT & wire		4.71	1.699		43.50	90.50		134	184
4300	GFI, 15 amp recpt., type NM cable		12.31	.650		47.50	34.50		82	104
4320	Type MC cable		10.67	.750		58.50	40		98.50	125
4330	EMT & wire		4.71	1.699		64.50	90.50		155	207
4350	GFI with #12/2, type NM cable		10.67	.750		50	40		90	115
4370	Type MC cable		9.20	.870		58.50	46.50		105	134
4380	EMT & wire		4.21	1.900		68.50	101		169.50	228
4400	20 amp recpt., #12/2 type NM cable		10.67	.750		52	40		92	118
4420	Type MC cable		9.20	.870		61	46.50		107.50	137
4430	EMT & wire		4.21	1.900		71	101		172	230
4500	Weather-proof cover for above receptacles, add	▼	32	.250	▼	4.08	13.35		17.43	24.50
4550	Air conditioner outlet, 20 amp-240 volt recpt.									
4560	30' of #12/2, 2 pole circuit breaker									
4570	Type NM cable	1 Elec	10	.800	Ea.	63	42.50		105.50	133

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4580	Type MC cable	1 Elec	9	.889	Eo.	73	47.50		120.50	152
4590	EMT & wire		4	2		81.50	107		188.50	250
4600	Decorotor style, type NM cable		10	.800		67.50	42.50		110	139
4620	Type MC cable		9	.889		78	47.50		125.50	157
4630	EMT & wire	▼	4	2	▼	86.50	107		193.50	255
4650	Dryer outlet, 30 amp-240 volt recpt., 20' of #10/3									
4660	2 pole circuit breaker									
4670	Type NM cable	1 Elec	6.41	1.248	Eo.	64	66.50		130.50	170
4680	Type MC cable		5.71	1.401		69	75		144	188
4690	EMT & wire	▼	3.48	2.299	▼	75.50	123		198.50	267
4700	Ronge outlet, 50 amp-240 volt recpt., 30' of #8/3									
4710	Type NM cable	1 Elec	4.21	1.900	Eo.	92	101		193	253
4720	Type MC cable		4	2		136	107		243	310
4730	EMT & wire		2.96	2.703		106	144		250	335
4750	Centrol vocuum outlet, Type NM cable		6.40	1.250		60	66.50		126.50	166
4770	Type MC cable		5.71	1.401		75.50	75		150.50	195
4780	EMT & wire	▼	3.48	2.299	▼	81.50	123		204.50	274
4800	30 amp-110 volt locking recpt., #10/2 circ. bkr.									
4810	Type NM cable	1 Elec	6.20	1.290	Eo.	69	69		138	179
4820	Type MC cable		5.40	1.481		86.50	79		165.50	213
4830	EMT & wire	▼	3.20	2.500	▼	92	133		225	300
4900	Low voltage outlets									
4910	Telephone recpt., 20' of 4/C phone wire	1 Elec	26	.308	Eo.	10.95	16.40		27.35	36.50
4920	TV recpt., 20' of RG59U coox wire, F type connector	"	16	.500	"	19.20	26.50		45.70	61
4950	Door bell chime, transformer, 2 buttons, 60' of bellwire									
4970	Economy model	1 Elec	11.50	.696	Eo.	58	37		95	120
4980	Custom model		11.50	.696		123	37		160	191
4990	Luxury model, 3 buttons	▼	9.50	.842	▼	305	45		350	400
6000	Lighting outlets									
6050	Wire only (for fixture), type NM cable	1 Elec	32	.250	Eo.	7.20	13.35		20.55	28
6070	Type MC cable		24	.333		13.85	17.80		31.65	41.50
6080	EMT & wire	▼	10	.800	▼	18.65	42.50		61.15	84.50
6100	Box (4"), ond wire (for fixture), type NM cable		25	.320		16.10	17.05		33.15	43.50
6120	Type MC cable		20	.400		23	21.50		44.50	57
6130	EMT & wire	▼	11	.727	▼	27.50	39		66.50	88.50
6200	Fixtures (use with lines 6050 or 6100 above)									
6210	Conopy style, economy grode	1 Elec	40	.200	Eo.	37.50	10.65		48.15	57
6220	Custom grode		40	.200		57.50	10.65		68.15	79
6250	Dining room chondelier, economy grode		19	.421		93.50	22.50		116	137
6260	Custom grode		19	.421		274	22.50		296.50	335
6270	Luxury grode		15	.533		620	28.50		648.50	725
6310	Kitchen fixture (fluorescent), economy grode		30	.267		69.50	14.25		83.75	98
6320	Custom grode		25	.320		190	17.05		207.05	235
6350	Outdoor, woll mounted, economy grode		30	.267		35.50	14.25		49.75	60.50
6360	Custom grode		30	.267		121	14.25		135.25	156
6370	Luxury grode		25	.320		274	17.05		291.05	325
6410	Outdoor PAR floodlights, 1 lomp, 150 wott		20	.400		38	21.50		59.50	74
6420	2 lomp, 150 wott each		20	.400		63	21.50		84.50	101
6425	Motion sensing, 2 lomp, 150 wott each		20	.400		76	21.50		97.50	116
6430	For infroed security sensor, odd		32	.250		127	13.35		140.35	160
6450	Outdoor, quartz-hologen, 300 wott flood		20	.400		46	21.50		67.50	82.50
6600	Recessed downlight, round, pre-wired, 50 or 75 wott trim		30	.267		47	14.25		61.25	73
6610	With shower light trim	▼	30	.267	▼	58	14.25		72.25	85.50

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6620	With wall washer trim	1 Elec	28	.286	Ea.	70	15.25		85.25	100
6630	With eye-ball trim	▼	28	.286		70	15.25		85.25	100
6640	For direct contact with insulation, add					2.49			2.49	2.74
6700	Porcelain lamp holder	1 Elec	40	.200		3.50	10.65		14.15	19.80
6710	With pull switch		40	.200		5.70	10.65		16.35	22.50
6750	Fluorescent strip, 1-20 watt tube, wrap around diffuser, 24"		24	.333		58.50	17.80		76.30	91
6760	1-34 watt tube, 48"		24	.333		75.50	17.80		93.30	110
6770	2-34 watt tubes, 48"		20	.400		89.50	21.50		111	131
6780	With residential ballast		20	.400		100	21.50		121.50	142
6800	Bathroom heat lamp, 1-250 watt		28	.286		51.50	15.25		66.75	79.50
6810	2-250 watt lamps	▼	28	.286	▼	82	15.25		97.25	114
6820	For timer switch, see Section 26 05 90.10 line 2400									
6900	Outdoor post lamp, incl. post, fixture, 35' of #14/2									
6910	Type NMC cable	1 Elec	3.50	2.286	Ea.	226	122		348	430
6920	Photo-eye, add		27	.296		38	15.80		53.80	65.50
6950	Clock dial time switch, 24 hr., w/enclosure, type NM cable		11.43	.700		70.50	37.50		108	134
6970	Type MC cable		11	.727		82	39		121	148
6980	EMT & wire	▼	4.85	1.649	▼	88	88		176	229
7000	Alarm systems									
7050	Smoke detectors, box, #14/3, type NM cable	1 Elec	14.55	.550	Ea.	35	29.50		64.50	83
7070	Type MC cable		12.31	.650		46.50	34.50		81	103
7080	EMT & wire	▼	5	1.600		48.50	85.50		134	181
7090	For relay output to security system, add					14.10			14.10	15.55
8000	Residential equipment									
8050	Disposal hook-up, incl. switch, outlet box, 3' of flex									
8060	20 amp-1 pole circ. bkr., and 25' of #12/2									
8070	Type NM cable	1 Elec	10	.800	Ea.	32.50	42.50		75	100
8080	Type MC cable		8	1		42	53.50		95.50	127
8090	EMT & wire	▼	5	1.600	▼	53.50	85.50		139	187
8100	Trash compactor or dishwasher hook-up, incl. outlet box,									
8110	3' of flex, 15 amp-1 pole circ. bkr., and 25' of #14/2									
8120	Type NM cable	1 Elec	10	.800	Ea.	24	42.50		66.50	90.50
8130	Type MC cable	▼	8	1		37	53.50		90.50	121
8140	EMT & wire	▼	5	1.600	▼	45	85.50		130.50	178
8150	Hot water sink dispenser hook-up, use line 8100									
8200	Vent/exhaust fan hook-up, type NM cable	1 Elec	32	.250	Ea.	7.20	13.35		20.55	28
8220	Type MC cable	▼	24	.333		13.85	17.80		31.65	41.50
8230	EMT & wire	▼	10	.800	▼	18.65	42.50		61.15	84.50
8250	Bathroom vent fan, 50 CFM (use with above hook-up)									
8260	Economy model	1 Elec	15	.533	Ea.	27	28.50		55.50	72.50
8270	Low noise model		15	.533		37	28.50		65.50	83
8280	Custom model	▼	12	.667	▼	127	35.50		162.50	193
8300	Bathroom or kitchen vent fan, 110 CFM									
8310	Economy model	1 Elec	15	.533	Ea.	75.50	28.50		104	126
8320	Low noise model	"	15	.533	"	93.50	28.50		122	146
8350	Paddle fan, variable speed (w/a lights)									
8360	Economy model (AC motor)	1 Elec	10	.800	Ea.	125	42.50		167.50	201
8362	With light kit		10	.800		166	42.50		208.50	246
8370	Custom model (AC motor)		10	.800		197	42.50		239.50	281
8372	With light kit		10	.800		238	42.50		280.50	325
8380	Luxury model (DC motor)		8	1		390	53.50		443.50	510
8382	With light kit		8	1		430	53.50		483.50	555
8390	Remote speed switch for above, add	▼	12	.667	▼	32.50	35.50		68	88.50

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8500	Whole house exhaust fan, ceiling mount, 36", variable speed									
8510	Remote switch, incl. shutters, 20 amp-1 pole circ. bkr.									
8520	30' of #12/2, type NM cable	1 Elec	4	2	Eo.	1,250	107		1,357	1,525
8530	Type MC cable		3.50	2.286		1,275	122		1,397	1,575
8540	EMT & wire	▼	3	2.667	▼	1,275	142		1,417	1,625
8600	Whirlpool tub hook-up, incl. timer switch, outlet box									
8610	3' of flex, 20 amp-1 pole GFI circ. bkr.									
8620	30' of #12/2, type NM cable	1 Elec	5	1.600	Eo.	127	85.50		212.50	267
8630	Type MC cable		4.20	1.905		131	102		233	297
8640	EMT & wire	▼	3.40	2.353	▼	141	126		267	345
8650	Hot water heater hook-up, incl. 1-2 pole circ. bkr., box;									
8660	3' of flex, 20' of #10/2, type NM cable	1 Elec	5	1.600	Eo.	34	85.50		119.50	165
8670	Type MC cable		4.20	1.905		47.50	102		149.50	204
8680	EMT & wire	▼	3.40	2.353	▼	48.50	126		174.50	241
9000	Heating/air conditioning									
9050	Furnace/boiler hook-up, incl. firestop, local on-off switch									
9060	Emergency switch, and 40' of type NM cable	1 Elec	4	2	Eo.	52.50	107		159.50	218
9070	Type MC cable		3.50	2.286		69.50	122		191.50	260
9080	EMT & wire	▼	1.50	5.333	▼	81	285		366	515
9100	Air conditioner hook-up, incl. local 60 amp disc. switch									
9110	3' sealtite, 40 amp, 2 pole circuit breaker									
9130	40' of #8/2, type NM cable	1 Elec	3.50	2.286	Eo.	182	122		304	385
9140	Type MC cable		3	2.667		249	142		391	485
9150	EMT & wire	▼	1.30	6.154	▼	218	330		548	730
9200	Heat pump hook-up, 1-40 & 1-100 amp 2 pole circ. bkr.									
9210	Local disconnect switch, 3' sealtite									
9220	40' of #8/2 & 30' of #3/2									
9230	Type NM cable	1 Elec	1.30	6.154	Eo.	525	330		855	1,075
9240	Type MC cable		1.08	7.407		600	395		995	1,250
9250	EMT & wire	▼	.94	8.511	▼	590	455		1,045	1,325
9500	Thermostat hook-up, using low voltage wire									
9520	Heating only, 25' of #18-3	1 Elec	24	.333	Eo.	9.60	17.80		27.40	37
9530	Heating/cooling, 25' of #18-4	"	20	.400	"	11.75	21.50		33.25	45

26 09 Instrumentation and Control for Electrical Systems

26 09 13 – Electrical Power Monitoring

26 09 13.10 Switchboard Instruments

0010	SWITCHBOARD INSTRUMENTS 3 phase, 4 wire									
0100	AC indicating, ohmmeter & switch	1 Elec	8	1	Eo.	2,175	53.50		2,228.50	2,450
0200	Voltmeter & switch		8	1		2,175	53.50		2,228.50	2,450
0300	Wattmeter		8	1		4,300	53.50		4,353.50	4,800
0400	AC recording, ohmmeter		4	2		7,650	107		7,757	8,550
0500	Voltmeter		4	2		7,650	107		7,757	8,550
0600	Ground fault protection, zero sequence		2.70	2.963		6,750	158		6,908	7,650
0700	Ground return path		2.70	2.963		6,750	158		6,908	7,650
0800	3 current transformers, 5 to 800 amp		2	4		3,150	213		3,363	3,775
0900	1000 to 1500 amp		1.30	6.154		4,525	330		4,855	5,475
1200	2000 to 4000 amp		1	8		5,325	425		5,750	6,525
1300	Fused potential transformer, maximum 600 volt		8	1		1,175	53.50		1,228.50	1,375

26 09 Instrumentation and Control for Electrical Systems

26 09 13 – Electrical Power Monitoring

26 09 13.30 Smart Metering			Daily	Labar-			2014 Bare Costs		Total	Total
			Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
0010	SMART METERING , In panel									
0100	Single phase, 120/208 volt, 100 amp	G	1 Elec	8.78	.911	Ea.	410	48.50		530
0120	200 amp	G		8.78	.911		410	48.50		530
0200	277 volt, 100 amp	G		8.78	.911		430	48.50		550
0220	200 amp	G		8.78	.911		430	48.50		550
1100	Three phase, 120/208 volt, 100 amp	G		4.69	1.706		605	91		800
1120	200 amp	G		4.69	1.706		605	91		800
1130	400 amp	G		4.69	1.706		605	91		800
1140	800 amp	G		4.69	1.706		715	91		925
1150	1600 amp	G		4.69	1.706		715	91		925
1200	277/480 volt, 100 amp	G		4.69	1.706		670	91		875
1220	200 amp	G		4.69	1.706		670	91		875
1230	400 amp	G		4.69	1.706		670	91		875
1240	800 amp	G		4.69	1.706		670	91		875
1250	1600 amp	G		4.69	1.706		785	91		995
2000	Data recorder, 8 meters	G		10.97	.729		1,375	39		1,550
2100	16 meters	G		8.53	.938		1,925	50		2,200
3000	Software package, per meter, basic	G					234			257
3100	Premium	G					605			665

26 09 23 – Lighting Control Devices

26 09 23.10 Energy Saving Lighting Devices

0010	ENERGY SAVING LIGHTING DEVICES									
0100	Occupancy sensors, passive infrared ceiling maunted	G	1 Elec	7	1.143	Ea.	95	61		197
0110	Ultrasonic ceiling maunted	G		7	1.143		105	61		208
0120	Dual technalagy ceiling maunted	G		6.50	1.231		152	65.50		267
0150	Automatic wall switches	G		24	.333		64.50	17.80		97.50
0160	Daylighting sensor, manual contral, ceiling maunted	G		7	1.143		111	61		214
0170	Remate and dimming contral with remate cantraller	G		6.50	1.231		174	65.50		291
0200	Remate power pack	G		10	.800		33	42.50		100
0250	Phataelectric contral, S.P.S.T. 120 V	G		8	1		16.90	53.50		98.50
0300	S.P.S.T. 208 V/277 V	G		8	1		27	53.50		110
0350	D.P.S.T. 120 V	G		6	1.333		196	71		320
0400	D.P.S.T. 208 V/277 V	G		6	1.333		154	71		275
0450	S.P.D.T. 208 V/277 V	G		6	1.333		183	71		305
0460	Daylight level sensor, wall maunted, an/off ar dimming	G		8	1		135	53.50		229

26 12 Medium-Voltage Transformers

26 12 19 – Pad-Mounted, Liquid-Filled, Medium-Voltage Transformers

26 12 19.10 Transformer, Oil-Filled

0010	TRANSFORMER, OIL-FILLED primary delta ar Y,									
0050	Pad maunted 5 kV ar 15 kV, with taps, 277/480 V secondary, 3 phase									
0100	150 kVA	R-3	.65	30.769	Ea.		8,875	1,625	215	12,500
0200	300 kVA		.45	44.444			12,600	2,350	310	17,800
0300	500 kVA		.40	50			18,000	2,650	350	24,200
0400	750 kVA		.38	52.632			22,700	2,775	370	29,600
0500	1000 kVA		.26	76.923			27,000	4,075	540	36,400
0600	1500 kVA		.23	86.957			32,000	4,600	610	42,800
0700	2000 kVA		.20	100			40,500	5,300	700	53,000
0800	3750 kVA		.16	125			76,000	6,625	875	94,500

26 22 Low-Voltage Transformers

26 22 13 – Low-Voltage Distribution Transformers

26 22 13.10 Transformer, Dry-Type		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
TRANSFORMER, DRY-TYPE							Labor	Equipment		
0010	TRANSFORMER, DRY-TYPE									
0050	Single phase, 240/480 volt primary, 120/240 volt secondary									
0100	1 kVA	1 Elec	2	4	Ea.	285	213		498	635
0300	2 kVA		1.60	5		430	267		697	870
0500	3 kVA		1.40	5.714		530	305		835	1,050
0700	5 kVA		1.20	6.667		730	355		1,085	1,325
0900	7.5 kVA	2 Elec	2.20	7.273		1,025	390		1,415	1,700
1100	10 kVA		1.60	10		1,300	535		1,835	2,225
1300	15 kVA		1.20	13.333		1,475	710		2,185	2,700
1500	25 kVA		1	16		2,025	855		2,880	3,500
1700	37.5 kVA		.80	20		2,625	1,075		3,700	4,475
1900	50 kVA		.70	22.857		3,100	1,225		4,325	5,250
2100	75 kVA		.65	24.615		4,100	1,325		5,425	6,500
2190	480 V primary 120/240 V secondary, nonvent., 15 kVA		1.20	13.333		1,500	710		2,210	2,725
2200	25 kVA		.90	17.778		2,200	950		3,150	3,850
2210	37 kVA		.75	21.333		2,625	1,150		3,775	4,575
2220	50 kVA		.65	24.615		3,100	1,325		4,425	5,400
2300	3 phase, 480 volt primary 120/208 volt secondary									
2310	Ventilated, 3 kVA	1 Elec	1	8	Ea.	785	425		1,210	1,500
2700	6 kVA		.80	10		895	535		1,430	1,775
2900	9 kVA		.70	11.429		1,025	610		1,635	2,075
3100	15 kVA	2 Elec	1.10	14.545		1,075	775		1,850	2,325
3300	30 kVA		.90	17.778		1,175	950		2,125	2,725
3500	45 kVA		.80	20		1,425	1,075		2,500	3,150
3700	75 kVA		.70	22.857		2,125	1,225		3,350	4,175
3900	112.5 kVA	R-3	.90	22.222		2,825	1,175	156	4,156	5,075
4100	150 kVA		.85	23.529		3,700	1,250	165	5,115	6,125
4300	225 kVA		.65	30.769		5,000	1,625	215	6,840	8,200
4500	300 kVA		.55	36.364		6,325	1,925	255	8,505	10,200
4700	500 kVA		.45	44.444		10,500	2,350	310	13,160	15,400
4800	750 kVA		.35	57.143		18,400	3,025	400	21,825	25,200

26 24 Switchboards and Panelboards

26 24 13 – Switchboards

26 24 13.10 Incoming Switchboards

0010	INCOMING SWITCHBOARDS main service section									
0100	Aluminum bus bars, not including CT's or PT's									
0200	No main disconnect, includes CT compartment									
0300	120/208 volt, 4 wire, 600 amp	2 Elec	1	16	Ea.	3,975	855		4,830	5,650
0400	800 amp		.88	18.182		3,975	970		4,945	5,825
0500	1000 amp		.80	20		4,775	1,075		5,850	6,850
0600	1200 amp		.72	22.222		4,775	1,175		5,950	7,025
0700	1600 amp		.66	24.242		4,775	1,300		6,075	7,175
0800	2000 amp		.62	25.806		5,150	1,375		6,525	7,700
1000	3000 amp		.56	28.571		6,800	1,525		8,325	9,750
2000	Fused switch & CT compartment									
2100	120/208 volt, 4 wire, 400 amp	2 Elec	1.12	14.286	Ea.	2,675	760		3,435	4,075
2200	600 amp		.94	17.021		3,150	910		4,060	4,825
2300	800 amp		.84	19.048		10,800	1,025		11,825	13,300
2400	1200 amp		.68	23.529		14,000	1,250		15,250	17,300
2900	Pressure switch & CT compartment									

26 24 Switchboards and Panelboards

26 24 13 – Switchboards

		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
26 24 13.10 Incoming Switchboards							Labor	Equipment		
3000	120/208 volt, 4 wire, 800 amp	2 Elec	.80	20	Ea.	9,650	1,075		10,725	12,200
3100	1200 amp		.66	24.242		18,700	1,300		20,000	22,500
3200	1600 amp		.62	25.806		19,900	1,375		21,275	24,000
3300	2000 amp		.56	28.571		21,100	1,525		22,625	25,500
4400	Circuit breaker, malded case & CT compartment									
4600	3 pole, 4 wire, 600 amp	2 Elec	.94	17.021	Ea.	8,325	910		9,235	10,500
4800	800 amp		.84	19.048		9,950	1,025		10,975	12,500
5000	1200 amp		.68	23.529		13,600	1,250		14,850	16,800
5100	Copper bus bars, nat incl. CT's or PT's, add, minimum					15%				

26 24 13.30 Distribution Switchboards Section

0010	DISTRIBUTION SWITCHBOARDS SECTION									
0100	Aluminum bus bars, nat including breakers									
0195	120/208 or 277/480 volt, 4 wire, 400 amp	2 Elec	1.10	14.545	Ea.	1,300	775		2,075	2,575
0200	600 amp		1	16		1,600	855		2,455	3,050
0300	800 amp		.88	18.182		2,100	970		3,070	3,750
0400	1000 amp		.80	20		2,600	1,075		3,675	4,450
0500	1200 amp		.72	22.222		3,100	1,175		4,275	5,175
0600	1600 amp		.66	24.242		3,550	1,300		4,850	5,825
0700	2000 amp		.62	25.806		4,150	1,375		5,525	6,600
0800	2500 amp		.60	26.667		4,675	1,425		6,100	7,275
0900	3000 amp		.56	28.571		5,675	1,525		7,200	8,500
0950	4000 amp		.52	30.769		8,300	1,650		9,950	11,600

26 24 13.40 Switchboards Feeder Section

0010	SWITCHBOARDS FEEDER SECTION group maunted devices									
0030	Circuit breakers									
0160	FA frame, 15 ta 60 amp, 240 volt, 1 pole	1 Elec	8	1	Ea.	119	53.50		172.50	211
0280	FA frame, 70 ta 100 amp, 240 volt, 1 pole		7	1.143		189	61		250	300
0420	KA frame, 70 ta 225 amp		3.20	2.500		1,225	133		1,358	1,550
0430	LA frame, 125 ta 400 amp		2.30	3.478		2,775	186		2,961	3,325
0460	MA frame, 450 ta 600 amp		1.60	5		4,950	267		5,217	5,850
0470	700 ta 800 amp		1.30	6.154		6,425	330		6,755	7,575
0480	MAL frame, 1000 amp		1	8		6,675	425		7,100	7,975
0490	PA frame, 1200 amp		.80	10		13,600	535		14,135	15,700
0500	Branch circuit, fusible switch, 600 volt, dauble 30/30 amp		4	2		885	107		992	1,125
0550	60/60 amp		3.20	2.500		910	133		1,043	1,200
0600	100/100 amp		2.70	2.963		1,150	158		1,308	1,475
0650	Single, 30 amp		5.30	1.509		730	80.50		810.50	920
0700	60 amp		4.70	1.702		805	91		896	1,025
0750	100 amp		4	2		1,050	107		1,157	1,325
0800	200 amp		2.70	2.963		1,425	158		1,583	1,775
0850	400 amp		2.30	3.478		2,600	186		2,786	3,125
0900	600 amp		1.80	4.444		3,175	237		3,412	3,825
0950	800 amp		1.30	6.154		5,325	330		5,655	6,350
1000	1200 amp		.80	10		6,100	535		6,635	7,500

26 24 16 – Panelboards

26 24 16.20 Panelboard and Load Center Circuit Breakers

0010	PANELBOARD AND LOAD CENTER CIRCUIT BREAKERS									
0050	Balt-an, 10,000 amp I.C., 120 volt, 1 pole									
0100	15 ta 50 amp	1 Elec	10	.800	Ea.	14.40	42.50		56.90	80
0200	60 amp		8	1		18.70	53.50		72.20	101
0300	70 amp		8	1		27.50	53.50		81	110
0350	240 volt, 2 pole									

26 24 Switchboards and Panelboards

26 24 16 – Panelboards

26 24 16.20 Panelboard and Load Center Circuit Breakers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0400	15 to 50 amp	1 Elec	8	1	Ea.	31.50	53.50		85	115
0500	60 amp		7.50	1.067		42.50	57		99.50	132
0600	80 to 100 amp		5	1.600		81.50	85.50		167	218
0700	3 pole, 15 to 60 amp		6.20	1.290		100	69		169	213
0800	70 amp		5	1.600		126	85.50		211.50	267
0900	80 to 100 amp		3.60	2.222		143	119		262	335
1000	22,000 amp I.C., 240 volt, 2 pole, 70 – 225 amp		2.70	2.963		615	158		773	910
1100	3 pole, 70 – 225 amp		2.30	3.478		685	186		871	1,025
1200	14,000 amp I.C., 277 volts, 1 pole, 15 – 30 amp		8	1		38	53.50		91.50	122
1300	22,000 amp I.C., 480 volts, 2 pole, 70 – 225 amp		2.70	2.963		615	158		773	910
1400	3 pole, 70 – 225 amp		2.30	3.478		760	186		946	1,125

26 24 16.30 Panelboards Commercial Applications

0010	PANELBOARDS COMMERCIAL APPLICATIONS									
0050	NQOD, w/20 amp 1 pole bolt-on circuit breakers									
0100	3 wire, 120/240 volts, 100 amp main lugs									
0150	10 circuits	1 Elec	1	8	Ea.	535	425		960	1,225
0200	14 circuits		.88	9.091		655	485		1,140	1,450
0250	18 circuits		.75	10.667		710	570		1,280	1,625
0300	20 circuits	▼	.65	12.308		795	655		1,450	1,850
0350	225 amp main lugs, 24 circuits	2 Elec	1.20	13.333		900	710		1,610	2,075
0400	30 circuits		.90	17.778		1,050	950		2,000	2,575
0450	36 circuits		.80	20		1,175	1,075		2,250	2,900
0500	38 circuits		.72	22.222		1,275	1,175		2,450	3,175
0550	42 circuits	▼	.66	24.242		1,325	1,300		2,625	3,375
0600	4 wire, 120/208 volts, 100 amp main lugs, 12 circuits	1 Elec	1	8		630	425		1,055	1,325
0650	16 circuits		.75	10.667		725	570		1,295	1,650
0700	20 circuits		.65	12.308		835	655		1,490	1,900
0750	24 circuits		.60	13.333		905	710		1,615	2,075
0800	30 circuits	▼	.53	15.094		1,025	805		1,830	2,350
0850	225 amp main lugs, 32 circuits	2 Elec	.90	17.778		1,150	950		2,100	2,700
0900	34 circuits		.84	19.048		1,200	1,025		2,225	2,825
0950	36 circuits		.80	20		1,225	1,075		2,300	2,950
1000	42 circuits	▼	.68	23.529	▼	1,350	1,250		2,600	3,375
1200	NEHB, w/20 amp, 1 pole bolt-on circuit breakers									
1250	4 wire, 277/480 volts, 100 amp main lugs, 12 circuits	1 Elec	.88	9.091	Ea.	1,225	485		1,710	2,050
1300	20 circuits	"	.60	13.333		1,800	710		2,510	3,050
1350	225 amp main lugs, 24 circuits	2 Elec	.90	17.778		2,050	950		3,000	3,675
1400	30 circuits		.80	20		2,450	1,075		3,525	4,300
1450	36 circuits		.72	22.222		2,850	1,175		4,025	4,900
1600	NQOD panel, w/20 amp, 1 pole, circuit breakers									
1650	3 wire, 120/240 volt with main circuit breaker									
1700	100 amp main, 12 circuits	1 Elec	.80	10	Ea.	795	535		1,330	1,675
1750	20 circuits	"	.60	13.333		1,000	710		1,710	2,175
1800	225 amp main, 30 circuits	2 Elec	.68	23.529		1,900	1,250		3,150	3,950
1850	42 circuits		.52	30.769		2,175	1,650		3,825	4,850
1900	400 amp main, 30 circuits		.54	29.630		2,600	1,575		4,175	5,250
1950	42 circuits	▼	.50	32		2,900	1,700		4,600	5,725
2000	4 wire, 120/208 volts with main circuit breaker									
2050	100 amp main, 24 circuits	1 Elec	.47	17.021	Ea.	1,175	910		2,085	2,625
2100	30 circuits	"	.40	20		1,325	1,075		2,400	3,050
2200	225 amp main, 32 circuits	2 Elec	.72	22.222		2,200	1,175		3,375	4,175
2250	42 circuits	▼	.56	28.571	▼	2,400	1,525		3,925	4,900

26 24 Switchboards and Panelboards

26 24 16 – Panelboards

26 24 16.30 Panelboards Commercial Applications		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2300	400 amp main, 42 circuits	2 Elec	.48	33.333	Ea.	3,225	1,775		5,000	6,200
2350	600 amp main, 42 circuits	▼	.40	40	▼	4,775	2,125		6,900	8,450
2400	NEHB, with 20 amp, 1 pole circuit breaker									
2450	4 wire, 277/480 volts with main circuit breaker									
2500	100 amp main, 24 circuits	1 Elec	.42	19.048	Ea.	2,350	1,025		3,375	4,125
2550	30 circuits	"	.38	21.053		2,750	1,125		3,875	4,700
2600	225 amp main, 30 circuits	2 Elec	.72	22.222		3,475	1,175		4,650	5,575
2650	42 circuits	"	.56	28.571	▼	4,275	1,525		5,800	6,975

26 24 19 – Motor-Control Centers

26 24 19.40 Motor Starters and Controls

0010	MOTOR STARTERS AND CONTROLS									
0050	Magnetic, FVNR, with enclosure and heaters, 480 volt									
0080	2 HP, size 00	1 Elec	3.50	2.286	Ea.	195	122		317	395
0100	5 HP, size 0		2.30	3.478		236	186		422	535
0200	10 HP, size 1	▼	1.60	5		265	267		532	690
0300	25 HP, size 2	2 Elec	2.20	7.273		500	390		890	1,125
0400	50 HP, size 3		1.80	8.889		810	475		1,285	1,600
0500	100 HP, size 4		1.20	13.333		1,800	710		2,510	3,050
0600	200 HP, size 5	▼	.90	17.778		4,225	950		5,175	6,050
0700	Combination, with motor circuit protectors, 5 HP, size 0	1 Elec	1.80	4.444		765	237		1,002	1,200
0800	10 HP, size 1	"	1.30	6.154		795	330		1,125	1,375
0900	25 HP, size 2	2 Elec	2	8		1,125	425		1,550	1,875
1000	50 HP, size 3	▼	1.32	12.121		1,600	645		2,245	2,750
1200	100 HP, size 4	▼	.80	20		3,500	1,075		4,575	5,450
1400	Combination, with fused switch, 5 HP, size 0	1 Elec	1.80	4.444		585	237		822	1,000
1600	10 HP, size 1	"	1.30	6.154		625	330		955	1,175
1800	25 HP, size 2	2 Elec	2	8		1,025	425		1,450	1,775
2000	50 HP, size 3		1.32	12.121		1,725	645		2,370	2,875
2200	100 HP, size 4	▼	.80	20	▼	3,000	1,075		4,075	4,900

26 25 Enclosed Bus Assemblies

26 25 13 – Bus Duct/Busway and Fittings

26 25 13.40 Copper Bus Duct

0010	COPPER BUS DUCT 10 ft. long									
0050	Indoor 3 pole 4 wire, plug-in, straight section, 225 amp	2 Elec	40	.400	L.F.	230	21.50		251.50	285
1000	400 amp		32	.500		230	26.50		256.50	293
1500	600 amp		26	.615		230	33		263	300
2400	800 amp		20	.800		273	42.50		315.50	365
2450	1000 amp		18	.889		300	47.50		347.50	400
2500	1350 amp		16	1		410	53.50		463.50	530
2510	1600 amp		12	1.333		465	71		536	615
2520	2000 amp		10	1.600		590	85.50		675.50	775
2550	Feeder, 600 amp		28	.571		202	30.50		232.50	268
2600	800 amp		22	.727		245	39		284	325
2700	1000 amp		20	.800		273	42.50		315.50	365
2800	1350 amp		18	.889		385	47.50		432.50	490
2900	1600 amp		14	1.143		440	61		501	570
3000	2000 amp		12	1.333	▼	560	71		631	720
3100	Elbows, 225 amp		4	4	Ea.	1,375	213		1,588	1,825
3200	400 amp	▼	3.60	4.444	▼	1,375	237		1,612	1,850

26 25 Enclosed Bus Assemblies

26 25 13 – Bus Duct/Busway and Fittings

26 25 13.40 Copper Bus Duct		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3300	600 amp	2 Elec	3.20	5	Ea.	1,375	267		1,642	1,900
3400	800 amp		2.80	5.714		1,475	305		1,780	2,075
3500	1000 amp		2.60	6.154		1,650	330		1,980	2,325
3600	1350 amp		2.40	6.667		1,850	355		2,205	2,550
3700	1600 amp		2.20	7.273		2,000	390		2,390	2,775
3800	2000 amp		1.80	8.889		2,475	475		2,950	3,425
4000	End box, 225 amp		34	.471		184	25		209	241
4100	400 amp		32	.500		184	26.50		210.50	243
4200	600 amp		28	.571		184	30.50		214.50	249
4300	800 amp		26	.615		184	33		217	252
4400	1000 amp		24	.667		184	35.50		219.50	256
4500	1350 amp		22	.727		175	39		214	251
4600	1600 amp		20	.800		175	42.50		217.50	257
4700	2000 amp		18	.889		215	47.50		262.50	305
4800	Cable tap box end, 225 amp		3.20	5		1,500	267		1,767	2,050
5000	400 amp		2.60	6.154		1,500	330		1,830	2,150
5100	600 amp		2.20	7.273		1,500	390		1,890	2,225
5200	800 amp		2	8		1,725	425		2,150	2,550
5300	1000 amp		1.60	10		1,850	535		2,385	2,825
5400	1350 amp		1.40	11.429		2,175	610		2,785	3,325
5500	1600 amp		1.20	13.333		2,450	710		3,160	3,775
5600	2000 amp		1	16		2,725	855		3,580	4,275
5700	Switchboard stub, 225 amp		5.40	2.963		1,375	158		1,533	1,750
5800	400 amp		4.60	3.478		1,375	186		1,561	1,800
5900	600 amp		4	4		1,375	213		1,588	1,850
6000	800 amp		3.20	5		1,675	267		1,942	2,225
6100	1000 amp		3	5.333		1,925	285		2,210	2,550
6200	1350 amp		2.60	6.154		2,375	330		2,705	3,100
6300	1600 amp		2.40	6.667		2,675	355		3,030	3,475
6400	2000 amp		2	8		3,250	425		3,675	4,200
6490	Tee fittings, 225 amp		2.40	6.667		1,875	355		2,230	2,600
6500	400 amp		2	8		1,875	425		2,300	2,725
6600	600 amp		1.80	8.889		1,875	475		2,350	2,775
6700	800 amp		1.60	10		2,175	535		2,710	3,175
6800	1350 amp		1.20	13.333		2,950	710		3,660	4,325
7000	1600 amp		1	16		3,375	855		4,230	4,975
7100	2000 amp	▼	.80	20		4,000	1,075		5,075	6,000
7200	Plug-in fusible switches w/3 fuses, 600 volt, 3 pole, 30 amp	1 Elec	4	2		840	107		947	1,075
7300	60 amp		3.60	2.222		945	119		1,064	1,225
7400	100 amp	▼	2.70	2.963		1,450	158		1,608	1,800
7500	200 amp	2 Elec	3.20	5		2,575	267		2,842	3,225
7600	400 amp		1.40	11.429		7,550	610		8,160	9,225
7700	600 amp		.90	17.778		8,550	950		9,500	10,900
7800	800 amp		.66	24.242		12,000	1,300		13,300	15,100
7900	1200 amp	▼	.50	32		22,500	1,700		24,200	27,400
8000	Plug-in circuit breakers, molded case, 15 to 50 amp	1 Elec	4.40	1.818		795	97		892	1,025
8100	70 to 100 amp	"	3.10	2.581		885	138		1,023	1,175
8200	150 to 225 amp	2 Elec	3.40	4.706		2,400	251		2,651	3,025
8300	250 to 400 amp		1.40	11.429		4,200	610		4,810	5,550
8400	500 to 600 amp		1	16		5,675	855		6,530	7,525
8500	700 to 800 amp		.64	25		7,000	1,325		8,325	9,700
8600	900 to 1000 amp		.56	28.571		10,000	1,525		11,525	13,300
8700	1200 amp	▼	.44	36.364	▼	12,000	1,950		13,950	16,200

26 27 Low-Voltage Distribution Equipment

26 27 16 – Electrical Cabinets and Enclosures

26 27 16.10 Cabinets		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	CABINETS									
7000	Cabinets, current transformer									
7050	Single door, 24" H x 24" W x 10" D	1 Elec	1.60	5	Eo.	178	267		445	595
7100	30" H x 24" W x 10" D		1.30	6.154		166	330		496	675
7150	36" H x 24" W x 10" D		1.10	7.273		186	390		576	785
7200	30" H x 30" W x 10" D		1	8		194	425		619	855
7250	36" H x 30" W x 10" D		.90	8.889		227	475		702	960
7300	36" H x 36" W x 10" D		.80	10		235	535		770	1,050
7500	Double door, 48" H x 36" W x 10" D		.60	13.333		555	710		1,265	1,675
7550	24" H x 24" W x 12" D		1	8		165	425		590	820

26 27 23 – Indoor Service Poles

26 27 23.40 Surface Raceway

0010	SURFACE RACEWAY									
0090	Metal, straight section									
0100	No. 500	1 Elec	100	.080	L.F.	1.04	4.27		5.31	7.55
0110	No. 700		100	.080		1.17	4.27		5.44	7.70
0400	No. 1500, small pancake		90	.089		2.15	4.74		6.89	9.45
0600	No. 2000, base & cover, blank		90	.089		2.19	4.74		6.93	9.50
0800	No. 3000, base & cover, blank		75	.107		4.40	5.70		10.10	13.35
1000	No. 4000, base & cover, blank		65	.123		7.30	6.55		13.85	17.90
1200	No. 6000, base & cover, blank		50	.160		11.40	8.55		19.95	25.50
2400	Fittings, elbows, No. 500		40	.200	Eo.	1.90	10.65		12.55	18.05
2800	Elbow cover, No. 2000		40	.200		3.57	10.65		14.22	19.90
2880	Tee, No. 500		42	.190		3.66	10.15		13.81	19.25
2900	No. 2000		27	.296		11.85	15.80		27.65	36.50
3000	Switch box, No. 500		16	.500		11	26.50		37.50	52
3400	Telephone outlet, No. 1500		16	.500		14.10	26.50		40.60	55.50
3600	Junction box, No. 1500		16	.500		9.65	26.50		36.15	50.50
3800	Plugmold wired sections, No. 2000									
4000	1 circuit, 6 outlets, 3 ft. long	1 Elec	8	1	Eo.	36	53.50		89.50	120
4100	2 circuits, 8 outlets, 6 ft. long	"	5.30	1.509	"	53	80.50		133.50	180

26 27 26 – Wiring Devices

26 27 26.10 Low Voltage Switching

0010	LOW VOLTAGE SWITCHING									
3600	Relays, 120 V or 277 V standard	1 Elec	12	.667	Eo.	41	35.50		76.50	98.50
3800	Flush switch, standard		40	.200		11.40	10.65		22.05	28.50
4000	Interchangeable		40	.200		14.90	10.65		25.55	32.50
4100	Surface switch, standard		40	.200		8.05	10.65		18.70	25
4200	Transformer 115 V to 25 V		12	.667		129	35.50		164.50	195
4400	Master control, 12 circuit, manual		4	2		125	107		232	297
4500	25 circuit, motorized		4	2		139	107		246	310
4600	Rectifier, silicon		12	.667		45	35.50		80.50	103
4800	Switchplates, 1 gang, 1, 2 or 3 switch, plastic		80	.100		4.95	5.35		10.30	13.45
5000	Stainless steel		80	.100		11.25	5.35		16.60	20.50
5400	2 gang, 3 switch, stainless steel		53	.151		22.50	8.05		30.55	37
5500	4 switch, plastic		53	.151		10.25	8.05		18.30	23.50
5800	3 gang, 9 switch, stainless steel		32	.250		64	13.35		77.35	90.50

26 27 26.20 Wiring Devices Elements

0010	WIRING DEVICES ELEMENTS									
0200	Taggle switch, quiet type, single pole, 15 amp	1 Elec	40	.200	Eo.	5.70	10.65		16.35	22.50
0600	3 way, 15 amp		23	.348		5.95	18.55		24.50	34.50

26 27 Low-Voltage Distribution Equipment

26 27 26 – Wiring Devices

26 27 26.20 Wiring Devices Elements		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0900	4 way, 15 amp	1 Elec	15	.533	Ea.	10.75	28.50		39.25	54.50
1650	Dimmer switch, 120 volt, incandescent, 600 watt, 1 pole	G	16	.500		18.40	26.50		44.90	60
2460	Receptacle, duplex, 120 volt, grounded, 15 amp		40	.200		1.22	10.65		11.87	17.30
2470	20 amp		27	.296		8.35	15.80		24.15	32.50
2490	Dryer, 30 amp		15	.533		5.20	28.50		33.70	48
2500	Range, 50 amp		11	.727		11.85	39		50.85	71
2600	Wall plates, stainless steel, 1 gang		80	.100		2.53	5.35		7.88	10.80
2800	2 gang		53	.151		4.29	8.05		12.34	16.75
3200	Lampholder, keyless		26	.308		11	16.40		27.40	36.50
3400	Pullchain with receptacle		22	.364		20.50	19.40		39.90	51.50

26 27 73 – Door Chimes

26 27 73.10 Doorbell System		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	DOORBELL SYSTEM, incl. transformer, button & signal									
0100	6" bell	1 Elec	4	2	Ea.	113	107		220	284
0200	Buzzer	"	4	2	"	104	107		211	274

26 28 Low-Voltage Circuit Protective Devices

26 28 16 – Enclosed Switches and Circuit Breakers

26 28 16.10 Circuit Breakers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	CIRCUIT BREAKERS (in enclosure)									
0100	Enclosed (NEMA 1), 600 volt, 3 pole, 30 amp	1 Elec	3.20	2.500	Ea.	495	133		628	745
0200	60 amp		2.80	2.857		610	152		762	900
0400	100 amp		2.30	3.478		700	186		886	1,050
0500	200 amp		1.50	5.333		1,475	285		1,760	2,050
0600	225 amp		1.50	5.333		1,625	285		1,910	2,200
0700	400 amp	2 Elec	1.60	10		2,750	535		3,285	3,825
0800	600 amp		1.20	13.333		4,000	710		4,710	5,475
1000	800 amp		.94	17.021		5,200	910		6,110	7,075

26 28 16.20 Safety Switches

26 28 16.20 SAFETY SWITCHES		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	SAFETY SWITCHES									
0100	General duty 240 volt, 3 pole NEMA 1, fusible, 30 amp	1 Elec	3.20	2.500	Ea.	86	133		219	295
0200	60 amp		2.30	3.478		146	186		332	440
0300	100 amp		1.90	4.211		250	225		475	610
0400	200 amp		1.30	6.154		535	330		865	1,075
0500	400 amp	2 Elec	1.80	8.889		1,350	475		1,825	2,200
0600	600 amp	"	1.20	13.333		2,550	710		3,260	3,875
2900	Heavy duty, 240 volt, 3 pole NEMA 1 fusible									
2910	30 amp	1 Elec	3.20	2.500	Ea.	139	133		272	355
3000	60 amp		2.30	3.478		234	186		420	535
3300	100 amp		1.90	4.211		370	225		595	740
3500	200 amp		1.30	6.154		635	330		965	1,200
3700	400 amp	2 Elec	1.80	8.889		1,625	475		2,100	2,500
3900	600 amp	"	1.20	13.333		3,025	710		3,735	4,400

26 29 Low-Voltage Controllers

26 29 13 – Enclosed Controllers

26 29 13.20 Control Stations		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	CONTROL STATIONS									
0050	NEMA 1, heavy duty, stop/start	1 Elec	8	1	EO.	134	53.50		187.50	227
0100	Stop/start, pilot light		6.20	1.290		182	69		251	305
0200	Hand/off/automatic		6.20	1.290		99	69		168	212
0400	Stop/start/reverse	▼	5.30	1.509	▼	180	80.50		260.50	320

26 32 Packaged Generator Assemblies

26 32 13 – Engine Generators

26 32 13.13 Diesel-Engine-Driven Generator Sets

0010	DIESEL-ENGINE-DRIVEN GENERATOR SETS									
2000	Diesel engine, including battery, charger,									
2010	muffler, & day tank, 30 kW	R-3	.55	36.364	EO.	16,400	1,925	255	18,580	21,200
2100	50 kW		.42	47.619		19,400	2,525	335	22,260	25,500
2200	75 kW		.35	57.143		25,100	3,025	400	28,525	32,700
2300	100 kW		.31	64.516		28,000	3,425	450	31,875	36,400
2400	125 kW		.29	68.966		29,500	3,650	485	33,635	38,400
2500	150 kW		.26	76.923		33,900	4,075	540	38,515	44,000
2600	175 kW		.25	80		36,900	4,225	560	41,685	47,600
2700	200 kW		.24	83.333		38,200	4,400	585	43,185	49,300
2800	250 kW		.23	86.957		44,800	4,600	610	50,010	57,000
2900	300 kW		.22	90.909		48,600	4,800	635	54,035	61,500
3000	350 kW		.20	100		55,000	5,300	700	61,000	69,000
3100	400 kW		.19	105		68,000	5,575	735	74,310	83,500
3200	500 kW	▼	.18	111	▼	85,500	5,875	780	92,155	103,500

26 32 13.16 Gas-Engine-Driven Generator Sets

0010	GAS-ENGINE-DRIVEN GENERATOR SETS									
0020	Gas or gasoline operated, includes battery,									
0050	charger, & muffler									
0200	3 phase 4 wire, 277/480 volt, 7.5 kW	R-3	.83	24.096	EO.	7,275	1,275	169	8,719	10,100
0300	11.5 kW		.71	28.169		10,300	1,500	197	11,997	13,700
0400	20 kW		.63	31.746		12,200	1,675	222	14,097	16,200
0500	35 kW		.55	36.364		14,500	1,925	255	16,680	19,100
0600	80 kW		.40	50		23,700	2,650	350	26,700	30,500
0700	100 kW		.33	60.606		26,000	3,200	425	29,625	33,900
0800	125 kW		.28	71.429		53,000	3,775	500	57,275	64,500
0900	185 kW	▼	.25	80	▼	70,500	4,225	560	75,285	84,500

26 33 Battery Equipment

26 33 43 – Battery Chargers

26 33 43.55 Electric Vehicle Charging

0010	ELECTRIC VEHICLE CHARGING									
0020	Level 2, wall mounted									
2200	Heavy duty	G	R-1A	15.36	1.042	EO.	3,525	46	3,571	3,975
2210	with RFID	G		12.29	1.302		3,800	57.50	3,857.50	4,275
2300	Free standing, single connector	G		10.24	1.563		4,050	69	4,119	4,550
2310	with RFID	G		8.78	1.822		4,650	80	4,730	5,225
2320	Double connector	G		7.68	2.083		6,050	91.50	6,141.50	6,825
2330	with RFID	G	▼	6.83	2.343	▼	6,675	103	6,778	7,475

26 35 Power Filters and Conditioners

26 35 13 – Capacitors

26 35 13.10 Capacitors Indoor		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
CAPACITORS INDOOR							Labor	Equipment		
0010	240 volts, single & 3 phase, 0.5 kVAR	1 Elec	2.70	2.963	Eo.	425	158		583	700
0100	1.0 kVAR		2.70	2.963		510	158		668	795
0150	2.5 kVAR		2	4		575	213		788	955
0200	5.0 kVAR		1.80	4.444		690	237		927	1,100
0250	7.5 kVAR		1.60	5		800	267		1,067	1,275
0300	10 kVAR		1.50	5.333		965	285		1,250	1,475
0350	15 kVAR		1.30	6.154		1,325	330		1,655	1,950
0400	20 kVAR		1.10	7.273		1,650	390		2,040	2,400
0450	25 kVAR		1	8		1,950	425		2,375	2,800
1000	480 volts, single & 3 phase, 1 kVAR		2.70	2.963		385	158		543	660
1050	2 kVAR		2.70	2.963		445	158		603	725
1100	5 kVAR		2	4		560	213		773	935
1150	7.5 kVAR		2	4		605	213		818	985
1200	10 kVAR		2	4		675	213		888	1,075
1250	15 kVAR		2	4		835	213		1,048	1,225
1300	20 kVAR		1.60	5		925	267		1,192	1,425
1350	30 kVAR		1.50	5.333		1,150	285		1,435	1,700
1400	40 kVAR		1.20	6.667		1,475	355		1,830	2,150
1450	50 kVAR		1.10	7.273		1,675	390		2,065	2,425

26 42 Cathodic Protection

26 42 16 – Passive Cathodic Protection for Underground Storage Tank

26 42 16.50 Cathodic Protection Wiring Methods

CATHODIC PROTECTION WIRING METHODS										
1000	Anodes, magnesium type, 9 #	R-15	18.50	2.595	Eo.	39	136	17.55	192.55	266
1010	17 #		13	3.692		70.50	193	25	288.50	395
1020	32 #		10	4.800		123	251	32.50	406.50	545
1030	48 #		7.20	6.667		162	350	45	557	755
1100	Graphite type w/epoxy cop, 3" x 60" (32 #)	R-22	8.40	4.438		127	201		328	445
1110	4" x 80" (68 #)		6	6.213		239	282		521	690
1120	6" x 72" (80 #)		5.20	7.169		1,475	325		1,800	2,125
1130	6" x 36" (45 #)		9.60	3.883		750	176		926	1,100
2000	Rectifiers, silicon type, air cooled, 28 V/10 A	R-19	3.50	5.714		2,300	305		2,605	2,975
2010	20 V/20 A		3.50	5.714		2,350	305		2,655	3,025
2100	Oil immersed, 28 V/10 A		3	6.667		3,125	355		3,480	3,975
2110	20 V/20 A		3	6.667		3,150	355		3,505	4,000
3000	Anode backfill, coke breeze	R-22	3850	.010	Lb.	.22	.44		.66	.91
4000	Cable, HMWPE, No. 8		2.40	15.533	M.L.F.	495	705		1,200	1,625
4010	No. 6		2.40	15.533		740	705		1,445	1,875
4020	No. 4		2.40	15.533		1,125	705		1,830	2,300
4030	No. 2		2.40	15.533		1,750	705		2,455	3,000
4040	No. 1		2.20	16.945		2,375	770		3,145	3,800
4050	No. 1/0		2.20	16.945		2,950	770		3,720	4,425
4060	No. 2/0		2.20	16.945		4,575	770		5,345	6,225
4070	No. 4/0		2	18.640		5,950	845		6,795	7,800
5000	Test station, 7 terminal box, flush curb type w/lockable cover	R-19	12	1.667	Eo.	71	89		160	211
5010	Reference cell, 2" dia PVC conduit, cplg., plug, set flush	"	4.80	4.167	"	150	223		373	500

26 51 Interior Lighting

26 51 13 – Interior Lighting Fixtures, Lamps, and Ballasts

26 51 13.50 Interior Lighting Fixtures		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	INTERIOR LIGHTING FIXTURES Including lamps, mounting									
0030	hardware and connections									
0100	Fluorescent, C.W. lamps, trafter, recess mounted in grid, RS									
0130	Grid ceiling mount									
0200	Acrylic lens, 1'W x 4'L, two 40 watt	1 Elec	5.70	1.404	Ea.	47.50	75		122.50	164
0210	1'W x 4'L, three 40 watt		5.40	1.481		54	79		133	177
0300	2'W x 2'L, two U40 watt		5.70	1.404		51	75		126	169
0400	2'W x 4'L, two 40 watt		5.30	1.509		50	80.50		130.50	176
0500	2'W x 4'L, three 40 watt		5	1.600		55	85.50		140.50	189
0600	2'W x 4'L, four 40 watt		4.70	1.702		57.50	91		148.50	200
0700	4'W x 4'L, four 40 watt	2 Elec	6.40	2.500		293	133		426	520
0800	4'W x 4'L, six 40 watt		6.20	2.581		305	138		443	540
0900	4'W x 4'L, eight 40 watt	▼	5.80	2.759		315	147		462	565
0910	Acrylic lens, 1'W x 4'L, two 32 watt T8	G 1 Elec	5.70	1.404		52	75		127	169
0930	2'W x 2'L, two U32 watt T8	G	5.70	1.404		70.50	75		145.50	190
0940	2'W x 4'L, two 32 watt T8	G	5.30	1.509		58	80.50		138.50	185
0950	2'W x 4'L, three 32 watt T8	G	5	1.600		59	85.50		144.50	193
0960	2'W x 4'L, four 32 watt T8	G	4.70	1.702	▼	64.50	91		155.50	207
1000	Surface mounted, RS									
1030	Acrylic lens with hinged & latched door frame									
1100	1'W x 4'L, two 40 watt	1 Elec	7	1.143	Ea.	63.50	61		124.50	162
1110	1'W x 4'L, three 40 watt		6.70	1.194		65.50	63.50		129	168
1200	2'W x 2'L, two U40 watt		7	1.143		68	61		129	167
1300	2'W x 4'L, two 40 watt		6.20	1.290		78	69		147	189
1400	2'W x 4'L, three 40 watt		5.70	1.404		79	75		154	199
1500	2'W x 4'L, four 40 watt	▼	5.30	1.509		81	80.50		161.50	210
1600	4'W x 4'L, four 40 watt	2 Elec	7.20	2.222		400	119		519	615
1700	4'W x 4'L, six 40 watt		6.60	2.424		435	129		564	670
1800	4'W x 4'L, eight 40 watt		6.20	2.581		450	138		588	700
1900	2'W x 8'L, four 40 watt		6.40	2.500		159	133		292	375
2000	2'W x 8'L, eight 40 watt	▼	6.20	2.581	▼	171	138		309	395
2100	Strip fixture									
2130	Surface mounted									
2200	4' long, one 40 watt, RS	1 Elec	8.50	.941	Ea.	27.50	50		77.50	105
2300	4' long, two 40 watt, RS		8	1		38.50	53.50		92	122
2400	4' long, one 40 watt, SL		8	1		46.50	53.50		100	131
2500	4' long, two 40 watt, SL	▼	7	1.143		63	61		124	161
2600	8' long, one 75 watt, SL	2 Elec	13.40	1.194		47.50	63.50		111	148
2700	8' long, two 75 watt, SL	"	12.40	1.290		57.50	69		126.50	166
2800	4' long, two 60 watt, HO	1 Elec	6.70	1.194		92.50	63.50		156	198
2900	8' long, two 110 watt, HO	2 Elec	10.60	1.509		97.50	80.50		178	228
2950	High bay pendant mounted, 16" W x 4' L, four 54 watt, T5HO	G	8.90	1.798		226	96		322	395
2952	2' W x 4' L, six 54 watt, T5HO	G	8.50	1.882		305	100		405	485
2954	2' W x 4' L, six 32 watt, T8	G	8.50	1.882	▼	177	100		277	345
3000	Strip, pendant mounted, industrial, white porcelain enamel									
3100	4' long, two 40 watt, RS	1 Elec	5.70	1.404	Ea.	52.50	75		127.50	170
3200	4' long, two 60 watt, HO	"	5	1.600		82	85.50		167.50	218
3300	8' long, two 75 watt, SL	2 Elec	8.80	1.818		97	97		194	252
3400	8' long, two 110 watt, HO	"	8	2		124	107		231	297
3470	Trafter, air handling, 2'W x 4'L with four 32 watt T8	G 1 Elec	4	2		111	107		218	282
3480	2'W x 2'L with two U32 watt T8	G	5.50	1.455		107	77.50		184.50	234
3490	Air connector insulated, 5" diameter		20	.400		67	21.50		88.50	106
3500	6" diameter	▼	20	.400	▼	68	21.50		89.50	107

26 51 Interior Lighting

26 51 13 – Interior Lighting Fixtures, Lamps, and Ballasts

26 51 13.50 Interior Lighting Fixtures			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
3510	Traffer parabolic lay-in, 1' W x 4' L with one 32 W T8		1 Elec	5.70	1.404	Ea.	113	75		188	236
3520	1' W x 4' L with two 32 W T8			5.30	1.509		135	80.50		215.50	270
3525	2' W x 2' L with two U32 W T8			5.70	1.404		114	75		189	238
3530	2' W x 4' L with three 32 W T8			5	1.600		126	85.50		211.50	267
4450	Incondescent, high hat can, round alzak reflector, prewired										
4470	100 watt		1 Elec	8	1	Ea.	70.50	53.50		124	158
4480	150 watt			8	1		103	53.50		156.50	193
4500	300 watt			6.70	1.194		238	63.50		301.50	360
4600	Square glass lens with metal trim, prewired										
4630	100 watt		1 Elec	6.70	1.194	Ea.	54.50	63.50		118	156
4700	200 watt			6.70	1.194		96	63.50		159.50	202
4800	300 watt			5.70	1.404		143	75		218	270
4900	Ceiling/wall, surface mounted, metal cylinder, 75 watt			10	.800		55.50	42.50		98	125
4920	150 watt			10	.800		80	42.50		122.50	152
5200	Ceiling, surface mounted,opal glass drum										
5300	8", one 60 watt lamp		1 Elec	10	.800	Ea.	44	42.50		86.50	113
5400	10", two 60 watt lamps			8	1		49.50	53.50		103	135
5500	12", four 60 watt lamps			6.70	1.194		69.50	63.50		133	172
6010	Vapor tight, incondescent, ceiling mounted, 200 watt			6.20	1.290		81.50	69		150.50	193
6100	Fluorescent, surface mounted, 2 lamps, 4' L, RS, 40 watt			3.20	2.500		114	133		247	325
6850	Vandalproof, surface mounted, fluorescent, two 32 watt T8			3.20	2.500		250	133		383	475
6860	Incondescent, one 150 watt			8	1		85	53.50		138.50	174
7500	Ballast replacement, by weight of ballast, to 15' high										
7520	Indoor fluorescent, less than 2 lb.		1 Elec	10	.800	Ea.	26	42.50		68.50	92.50
7540	Two 40W, watt reducer, 2 to 5 lb.			9.40	.851		41	45.50		86.50	113
7560	Two F96 slimline, over 5 lb.			8	1		76	53.50		129.50	164
7580	Vaportite ballast, less than 2 lb.			9.40	.851		26	45.50		71.50	96.50
7600	2 lb. to 5 lb.			8.90	.899		41	48		89	117
7620	Over 5 lb.			7.60	1.053		76	56		132	168
7630	Electronic ballast for two tubes			8	1		37	53.50		90.50	121
7640	Dimmable ballast one lamp			8	1		105	53.50		158.50	196
7650	Dimmable ballast two-lamp			7.60	1.053		103	56		159	197
26 51 13.55 Interior LED Fixtures											
0010	INTERIOR LED FIXTURES Incl. lamps, and mounting hardware										
0100	Downlight, recess mounted, 7.5" diameter, 25 watt		1 Elec	8	1	Ea.	770	53.50		823.50	930
0120	10" diameter, 36 watt			8	1		815	53.50		868.50	975
0140	12" x 12", 40 watt			6.70	1.194		855	63.50		918.50	1,025
0160	cylinder, 7.8 watts			8	1		440	53.50		493.50	565
0180	13.3 watts			8	1		585	53.50		638.50	725
1000	Troffer, recess mounted, 2' x 4', 3750 Lumens			5.30	1.509		194	80.50		274.50	335
1010	4000 Lumens			5	1.600		239	85.50		324.50	390
1020	4500 Lumens			4.70	1.702		325	91		416	495
1100	Traffer retrofit kit, 46", 37 watt			21	.381		405	20.50		425.50	475
1110	55 watt			20	.400		560	21.50		581.50	645
1120	74 watt			18	.444		560	23.50		583.50	650
1200	Traffer, volumetric recess mounted, 2' x 2'			5.70	1.404		555	75		630	720
2000	Strip, surface mounted, one light bar 4' long, 40 watt			8.50	.941		720	50		770	865
2010	60 watt			8	1		745	53.50		798.50	900
2020	Two light bar 4' long, 80 watt			7	1.143		985	61		1,046	1,175
3000	Linear, suspended mounted, one light bar 4' long, 37 watt			6.70	1.194		330	63.50		393.50	460
3010	One light bar 8' long, 74 watt		2 Elec	12.20	1.311		615	70		685	780
3020	Two light bar 4' long, 74 watt		1 Elec	5.70	1.404		660	75		735	835

26 51 Interior Lighting

26 51 13 – Interior Lighting Fixtures, Lamps, and Ballasts

26 51 13.55 Interior LED Fixtures			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
3030	Two light bar 8' long, 148 watt		2 Elec	8.80	1.818	Ea.	1,225	97		1,322	1,500
4000	High bay, surface mounted, round, 150 watts			5.41	2.959		1,375	158		1,533	1,725
4010	2 bars, 164 watts			5.41	2.959		970	158		1,128	1,300
4020	3 bars, 246 watts			5.01	3.197		1,250	171		1,421	1,625
4030	4 bars, 328 watts			4.60	3.478		1,525	186		1,711	1,950
4040	5 bars, 410 watts		3 Elec	4.20	5.716		1,775	305		2,080	2,425
4050	6 bars, 492 watts			3.80	6.324		2,025	335		2,360	2,725
4060	7 bars, 574 watts			3.39	7.075		2,300	375		2,675	3,100
4070	8 bars, 656 watts			2.99	8.029		2,550	430		2,980	3,450
5000	track, lighthead, 6 watt		1 Elec	32	.250		65.50	13.35		78.85	92
5010	9 watt		"	32	.250		85.50	13.35		98.85	114
6000	Garage, surface mount, 103 watts		2 Elec	6.50	2.462		1,150	131		1,281	1,475
6100	pendent mount, 80 watts			6.50	2.462		830	131		961	1,100
6200	95 watts			6.50	2.462		940	131		1,071	1,225
6300	125 watts			6.50	2.462		1,050	131		1,181	1,350

26 52 Emergency Lighting

26 52 13 – Emergency Lighting Equipments

26 52 13.10 Emergency Lighting and Battery Units

0010	EMERGENCY LIGHTING AND BATTERY UNITS										
0300	Emergency light units, battery operated										
0350	Twin sealed beam light, 25 watt, 6 volt each										
0500	Lead battery operated		1 Elec	4	2	Ea.	143	107		250	320
0700	Nickel cadmium battery operated			4	2		660	107		767	885
0900	Self-contained fluorescent lamp pack			10	.800		159	42.50		201.50	239

26 53 Exit Signs

26 53 13 – Exit Lighting

26 53 13.10 Exit Lighting Fixtures

0010	EXIT LIGHTING FIXTURES										
0080	Exit light ceiling or wall mount, incandescent, single face		1 Elec	8	1	Ea.	39	53.50		92.50	123
0100	Double face			6.70	1.194		39	63.50		102.50	138
0200	LED standard, single face			8	1		76	53.50		129.50	164
0220	Double face			6.70	1.194		76	63.50		139.50	180
0230	LED vandal-resistant, single face			7.27	1.100		227	58.50		285.50	340
0240	LED w/battery unit, single face			4.40	1.818		140	97		237	298
0260	Double face			4	2		142	107		249	315
0262	LED w/battery unit, vandal-resistant, single face			4.40	1.818		380	97		477	560
0270	Combination emergency light units and exit sign			4	2		191	107		298	370

26 54 Classified Location Lighting

26 54 13 – Classified Lighting

26 54 13.20 Explosionproof	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 EXPLOSIONPROOF, incl lamps, mounting hardware and connections									
6510 Incandescent, ceiling mounted, 200 watt	1 Elec	4	2	Ea.	1,075	107		1,182	1,325
6600 Fluorescent, RS, 4' long, ceiling mounted, two 40 watt	"	2.70	2.963	"	2,825	158		2,983	3,325

26 55 Special Purpose Lighting

26 55 61 – Theatrical Lighting

26 55 61.10 Lights

0010 LIGHTS									
2000 Lights, border, quartz, reflector, vented, colored or white	1 Elec	20	.400	L.F.	173	21.50		194.50	222
2100 Spotlight, follow spot, with transformer, 2,100 watt	"	4	2	Ea.	3,075	107		3,182	3,525
2600 For no transformer, deduct					910			910	1,000
3000 Stationary spot, fresnel quartz, 6" lens	1 Elec	4	2		131	107		238	305
3100 8" lens		4	2		231	107		338	415
3500 Ellipsoidal quartz, 1,000W, 6" lens		4	2		335	107		442	530
3600 12" lens		4	2		600	107		707	820
4000 Strobe light, 1 to 15 flashes per second, quartz		3	2.667		750	142		892	1,050
4500 Color wheel, portable, five hole, motorized		4	2		194	107		301	375

26 56 Exterior Lighting

26 56 13 – Lighting Poles and Standards

26 56 13.10 Lighting Poles

0010 LIGHTING POLES									
2800 Light poles, anchor base									
2820 not including concrete bases									
2840 Aluminum pole, 8' high	1 Elec	4	2	Ea.	695	107		802	925
3000 20' high	R-3	2.90	6.897		925	365	48.50	1,338.50	1,625
3200 30' high		2.60	7.692		1,750	405	54	2,209	2,600
3400 35' high		2.30	8.696		1,900	460	61	2,421	2,850
3600 40' high	▼	2	10		2,175	530	70	2,775	3,275
3800 Bracket arms, 1 arm	1 Elec	8	1		119	53.50		172.50	211
4000 2 arms		8	1		240	53.50		293.50	345
4200 3 arms		5.30	1.509		360	80.50		440.50	515
4400 4 arms		5.30	1.509		480	80.50		560.50	650
4500 Steel pole, galvanized, 8' high	▼	3.80	2.105		600	112		712	835
4600 20' high	R-3	2.60	7.692		1,100	405	54	1,559	1,875
4800 30' high		2.30	8.696		1,300	460	61	1,821	2,175
5000 35' high		2.20	9.091		1,425	480	63.50	1,968.50	2,350
5200 40' high	▼	1.70	11.765		1,750	625	82.50	2,457.50	2,950
5400 Bracket arms, 1 arm	1 Elec	8	1		179	53.50		232.50	276
5600 2 arms		8	1		277	53.50		330.50	385
5800 3 arms		5.30	1.509		300	80.50		380.50	450
6000 4 arms	▼	5.30	1.509	▼	415	80.50		495.50	580

26 56 16 – Parking Lighting

26 56 16.55 Parking LED Lighting

0010 PARKING LED LIGHTING									
0100 Round pole mounting, 88 lamp watts	G 1 Elec	2	4	Ea.	1,975	213		2,188	2,500
0110 Square pole mounting, 223 lamp watts	G "	2	4	"	3,475	213		3,688	4,150

26 56 Exterior Lighting

26 56 19 – Roadway Lighting

26 56 19.20 Roadway Luminaire		Crew	Doily Output	Labor- Hours	Unit	Material	2014 Bore Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	ROADWAY LUMINAIRE									
2650	Roadway area luminaire, low pressure sodium, 135 watt	1 Elec	2	4	Ea.	645	213		858	1,025
2700	180 watt	"	2	4		690	213		903	1,075
2750	Metal halide, 400 watt	2 Elec	4.40	3.636		550	194		744	895
2760	1000 watt		4	4		620	213		833	1,000
2780	High pressure sodium, 400 watt		4.40	3.636		575	194		769	920
2790	1000 watt		4	4		655	213		868	1,050

26 56 19.55 Roadway LED Luminaire

0010	ROADWAY LED LUMINAIRE									
0100	LED fixture, 72 LEDs, 120 V AC or 12 V DC, equal to 60 watt		1 Elec	2.70	2.963	Ea.	585	158	743	880
0110	108 LEDs, 120 V AC or 12 V DC, equal to 90 watt			2.70	2.963		690	158	848	995
0120	144 LEDs, 120 V AC or 12 V DC, equal to 120 watt			2.70	2.963		845	158	1,003	1,175
0130	252 LEDs, 120 V AC or 12 V DC, equal to 210 watt		2 Elec	4.40	3.636		1,175	194	1,369	1,600
0140	Replaces high pressure sodium fixture, 75 watt		1 Elec	2.70	2.963		715	158	873	1,025
0150	125 watt			2.70	2.963		815	158	973	1,125
0160	150 watt			2.70	2.963		1,025	158	1,183	1,350
0170	175 watt			2.70	2.963		1,225	158	1,383	1,575
0180	200 watt			2.70	2.963		1,425	158	1,583	1,800
0190	250 watt		2 Elec	4.40	3.636		1,625	194	1,819	2,100
0200	320 watt		"	4.40	3.636		1,775	194	1,969	2,275

26 56 23 – Area Lighting

26 56 23.10 Exterior Fixtures

0010	EXTERIOR FIXTURES With lamps									
0200	Wall mounted, incandescent, 100 watt		1 Elec	8	1	Ea.	34.50	53.50	88	118
0400	Quartz, 500 watt			5.30	1.509		49.50	80.50	130	176
1100	Wall pack, low pressure sodium, 35 watt			4	2		225	107	332	410
1150	55 watt			4	2		268	107	375	455

26 56 23.55 Exterior LED Fixtures

0010	EXTERIOR LED FIXTURES									
0100	Wall mounted, indoor/outdoor, 12 watt		1 Elec	10	.800	Ea.	370	42.50	412.50	470
0110	32 watt			10	.800		495	42.50	537.50	610
0120	66 watt			10	.800		715	42.50	757.50	850
0200	outdoor, 110 watt			10	.800		1,100	42.50	1,142.50	1,275
0210	220 watt			10	.800		1,925	42.50	1,967.50	2,175
0300	modular, type IV, 120 V, 50 lamp watts			9	.889		1,325	47.50	1,372.50	1,550
0310	101 lamp watts			9	.889		1,500	47.50	1,547.50	1,725
0320	126 lamp watts			9	.889		1,900	47.50	1,947.50	2,150
0330	202 lamp watts			9	.889		2,150	47.50	2,197.50	2,425
0340	240 V, 50 lamp watts			8	1		1,375	53.50	1,428.50	1,600
0350	101 lamp watts			8	1		1,550	53.50	1,603.50	1,775
0360	126 lamp watts			8	1		1,950	53.50	2,003.50	2,200
0370	202 lamp watts			8	1		2,200	53.50	2,253.50	2,500
0400	wall pack, glass, 13 lamp watts			4	2		515	107	622	725
0410	paly w/photocell, 26 lamp watts			4	2		320	107	427	515
0420	50 lamp watts			4	2		755	107	862	990
0430	replacement, 40 watts			4	2		660	107	767	885
0440	60 watts			4	2		830	107	937	1,075

26 56 Exterior Lighting

26 56 36 – Flood Lighting

26 56 36.20 Floodlights		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	FLOODLIGHTS with ballast and lamp,									
1400	Pole mounted, pole not included									
1950	Metal halide, 175 watt	1 Elec	2.70	2.963	Ea.	335	158		493	605
2000	400 watt	2 Elec	4.40	3.636		415	194		609	750
2200	1000 watt	"	4	4		575	213		788	950
2340	High pressure sodium, 70 watt	1 Elec	2.70	2.963		243	158		401	505
2400	400 watt	2 Elec	4.40	3.636		375	194		569	705
2600	1000 watt	"	4	4		645	213		858	1,025

26 56 36.55 LED Floodlights

0010	LED FLOODLIGHTS with ballast and lamp,									
0020	Pole mounted, pole not included									
0100	11 watt	 1 Elec	4	2	Ea.	345	107		452	540
0110	46 watt		4	2		1,025	107		1,132	1,300
0120	90 watt		4	2		1,500	107		1,607	1,800
0130	288 watt		4	2		2,325	107		2,432	2,700

26 61 Lighting Systems and Accessories

26 61 23 – Lamps Applications

26 61 23.10 Lamps

0010	LAMPS									
0080	Fluorescent, rapid start, cool white, 2' long, 20 watt	1 Elec	1	8	C	310	425		735	980
0100	4' long, 40 watt		.90	8.889		236	475		711	970
0200	Slimline, 4' long, 40 watt		.90	8.889		1,175	475		1,650	2,000
0210	4' long, 30 watt energy saver		.90	8.889		1,175	475		1,650	2,000
0400	High output, 4' long, 60 watt		.90	8.889		740	475		1,215	1,525
0410	8' long, 95 watt energy saver		.80	10		750	535		1,285	1,625
0500	8' long, 110 watt		.80	10		750	535		1,285	1,625
0512	2' long, T5, 14 watt energy saver		1	8		1,000	425		1,425	1,775
0514	3' long, T5, 21 watt energy saver		.90	8.889		1,000	475		1,475	1,825
0516	4' long, T5, 28 watt energy saver		.90	8.889		870	475		1,345	1,675
0517	4' long, T5, 54 watt energy saver		.90	8.889		1,575	475		2,050	2,425
0560	Twin tube compact lamp		.90	8.889		425	475		900	1,175
0570	Double twin tube compact lamp		.80	10		945	535		1,480	1,850
0600	Mercury vapor, mogul base, deluxe white, 100 watt		.30	26.667		3,650	1,425		5,075	6,150
0700	250 watt		.30	26.667		3,550	1,425		4,975	6,025
0800	400 watt		.30	26.667		5,100	1,425		6,525	7,725
0900	1000 watt		.20	40		7,350	2,125		9,475	11,300
1000	Metal halide, mogul base, 175 watt		.30	26.667		3,000	1,425		4,425	5,425
1200	400 watt		.30	26.667		5,600	1,425		7,025	8,275
1300	1000 watt		.20	40		7,800	2,125		9,925	11,800
1350	High pressure sodium, 70 watt		.30	26.667		3,650	1,425		5,075	6,150
1380	250 watt		.30	26.667		5,800	1,425		7,225	8,525
1400	400 watt		.30	26.667		4,275	1,425		5,700	6,825
1450	1000 watt		.20	40		11,800	2,125		13,925	16,100
3000	Guards, fluorescent lamp, 4' long		1	8		1,400	425		1,825	2,200
3200	8' long		.90	8.889		2,800	475		3,275	3,800

26 61 23.55 LED Lamps

0010	LED LAMPS									
0100	LED lamp, interior, shape A60, equal to 60 watt	 1 Elec	160	.050	Ea.	22	2.67		24.67	28.50
0200	Globe frosted A60, equal to 60 watt		160	.050		22	2.67		24.67	28.50

26 61 Lighting Systems and Accessories

26 61 23 – Lamps Applications

26 61 23.55 LED Lamps			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0300	Globe earth, equal to 100 watt	G	1 Elec	160	.050	Ea.	73.50	2.67		76.17	84.50
1100	MR16, 3 watt, replacement of halogen lamp 25 watt	G		130	.062		21	3.28		24.28	28.50
1200	6 watt replacement of halogen lamp 45 watt	G		130	.062		46.50	3.28		49.78	56
2100	10 watt, PAR20, equal to 60 watt	G		130	.062		47.50	3.28		50.78	57
2200	15 watt, PAR30, equal to 100 watt	G	▼	130	.062	▼	91.50	3.28		94.78	106

26 71 Electrical Machines

26 71 13 – Motors Applications

26 71 13.20 Motors

0010	MOTORS 230/460 volts, 60 HZ										
0050	Dripproof, premium efficiency, 1.15 service factor										
0060	1800 RPM, 1/4 HP		1 Elec	5.33	1.501	Ea.	192	80		272	330
0070	1/3 HP			5.33	1.501		198	80		278	335
0080	1/2 HP			5.33	1.501		207	80		287	350
0090	3/4 HP			5.33	1.501		248	80		328	390
0100	1 HP			4.50	1.778		279	95		374	445
0250	5 HP			4.50	1.778		600	95		695	800
0350	10 HP			4	2		855	107		962	1,100
0450	20 HP		2 Elec	5.20	3.077		1,525	164		1,689	1,925

Division Notes

[illegible]

Estimating Tips

27 20 00 Data Communications

27 30 00 Voice Communications

27 40 00 Audio-Video Communications

When estimating material costs for special systems, it is always prudent to obtain manufacturers' quotations for equipment prices and special installation requirements which will affect the total costs.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 27.

27 13 Communications Backbone Cabling

27 13 23 – Communications Optical Fiber Backbone Cabling

27 13 23.13 Communications Optical Fiber				Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 COMMUNICATIONS OPTICAL FIBER									Labor	Equipment		
0040 Specialized tools & techniques cause installation costs to vary.												
0070 Fiber optic, cable, bulk simplex, single mode				1 Elec	8	1	C.L.F.	23	53.50		76.50	106
0080 Multi mode					8	1		49.50	53.50		103	135
0090 4 strand, single mode					7.34	1.090		44	58		102	136
0095 Multi mode					7.34	1.090		50.50	58		108.50	143
0100 12 strand, single mode					6.67	1.199		105	64		169	212
0105 Multi mode				▼	6.67	1.199	▼	106	64		170	213
0150 Jumper							Eo.	33.50			33.50	37
0200 Pigtail								33.50			33.50	37
0300 Connector				1 Elec	24	.333		20.50	17.80		38.30	49
0350 Finger splice					32	.250		32.50	13.35		45.85	55.50
0400 Transceiver (low cost bi-directional)					8	1		415	53.50		468.50	540
0450 Rock housing, 4 rock spaces, 12 panels (144 fibers)					2	4		495	213		708	865
0500 Patch panel, 12 ports				▼	6	1.333	▼	245	71		316	375

27 41 Audio-Video Systems

27 41 33 – Master Antenna Television Systems

27 41 33.10 T.V. Systems

0010	T.V. SYSTEMS, not including rough-in wires, cables & conduits										
0100	Master TV antenno system										
0200	VHF reception & distribution, 12 outlets	1 Elec	6	1.333	Outlet	158	71		229		280
0400	30 outlets		10	.800		140	42.50		182.50		218
0600	100 outlets		13	.615		142	33		175		206
0800	VHF & UHF reception & distribution, 12 outlets		6	1.333		211	71		282		340
1000	30 outlets		10	.800		140	42.50		182.50		218
1200	100 outlets		13	.615		142	33		175		206
1400	School ond deluxe systems, 12 outlets		2.40	3.333		278	178		456		570
1600	30 outlets		4	2		244	107		351		430
1800	80 outlets		5.30	1.509		234	80.50		314.50		380

27 51 Distributed Audio-Video Communications Systems

27 51 16 – Public Address and Mass Notification Systems

27 51 16.10 Public Address System

0010	PUBLIC ADDRESS SYSTEM									
0100	Conventional, office	1 Elec	5.33	1.501	Speaker	134	80	214	267	
0200	Industrial	"	2.70	2.963	"	258	158	416	520	

27 51 19 – Sound Masking Systems

27 51 19.10 Sound System

0010	SOUND SYSTEM, not including rough-in wires, cables & conduits									
0100	Components, projector outlet	1 Elec	8	1	EO.	44.50	53.50		98	129
0200	Microphone		4	2		79.50	107		186.50	248
0400	Speakers, ceiling or wall		8	1		116	53.50		169.50	208
0600	Trumpets		4	2		216	107		323	400
0800	Privacy switch		8	1		86.50	53.50		140	175
1000	Monitor panel		4	2		385	107		492	585
1200	Antenna, AM/FM		4	2		135	107		242	310
1400	Volume control		8	1		87.50	53.50		141	177
1600	Amplifier, 250 watts		1	8		1,250	425		1,675	2,025

27 51 Distributed Audio-Video Communications Systems

27 51 19 – Sound Masking Systems

27 51 19.10 Sound System		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1800	Cabinets	1 Elec	1	8	Ea.	840	425		1,265	1,550
2000	Intercom, 30 station capacity, master station	2 Elec	2	8		2,300	425		2,725	3,175
2200	Remote station	1 Elec	8	1		162	53.50		215.50	258
2400	Intercom outlets		8	1		95	53.50		148.50	184
2600	Handset		4	2		315	107		422	505
2800	Emergency call system, 12 zones, annunciator		1.30	6.154		945	330		1,275	1,550
3000	Bell		5.30	1.509		98	80.50		178.50	229
3200	Light or relay		8	1		49	53.50		102.50	134
3400	Transformer		4	2		215	107		322	395
3600	House telephone, talking station		1.60	5		460	267		727	910
3800	Press to talk, release to listen	▼	5.30	1.509		108	80.50		188.50	239
4000	System-on button					64.50			64.50	71
4200	Door release	1 Elec	4	2		115	107		222	287
4400	Combination speaker and microphone		8	1		196	53.50		249.50	296
4600	Termination box		3.20	2.500		61.50	133		194.50	268
4800	Amplifier or power supply		5.30	1.509		710	80.50		790.50	900
5000	Vestibule door unit		16	.500	None	130	26.50		156.50	183
5200	Strip cabinet		27	.296	Ea.	246	15.80		261.80	295
5400	Directory	▼	16	.500	"	116	26.50		142.50	167

27 52 Healthcare Communications and Monitoring Systems

27 52 23 – Nurse Call/Code Blue Systems

27 52 23.10 Nurse Call Systems

0010	NURSE CALL SYSTEMS									
0100	Single bedside call station	1 Elec	8	1	Ea.	228	53.50		281.50	330
0200	Ceiling speaker station		8	1		66.50	53.50		120	154
0400	Emergency call station		8	1		71.50	53.50		125	159
0600	Pillow speaker		8	1		176	53.50		229.50	273
0800	Double bedside call station		4	2		141	107		248	315
1000	Duty station		4	2		146	107		253	320
1200	Standard call button		8	1		86	53.50		139.50	175
1400	Lights, corridor, name or zone indicator		8	1		48.50	53.50		102	134
1600	Master control station for 20 stations	2 Elec	.65	24.615	Total	3,950	1,325		5,275	6,300

27 53 Distributed Systems

27 53 13 – Clock Systems

27 53 13.50 Clock Equipments

0010	CLOCK EQUIPMENTS, not including wires & conduits									
0100	Time system components, master controller	1 Elec	.33	24.242	Ea.	1,850	1,300		3,150	3,950
0200	Program bell		8	1		86	53.50		139.50	175
0400	Combination clock & speaker		3.20	2.500		212	133		345	435
0600	Frequency generator		2	4		2,375	213		2,588	2,950
0800	Job time automatic stamp recorder	▼	4	2		535	107		642	750
1600	Master time clock system, clocks & bells, 20 room	4 Elec	.20	160		6,100	8,525		14,625	19,500
1800	50 room	"	.08	400		12,500	21,300		33,800	45,700
1900	Time clock	1 Elec	3.20	2.500		440	133		573	685
2000	100 cords in & out, 1 color					9.05			9.05	10
2200	2 colors					9.05			9.05	10
2800	Metal rack for 25 cards	1 Elec	7	1.143		43.50	61		104.50	139

Division Notes

[illegible]

Estimating Tips

- When estimating material costs for electronic safety and security systems, it is always prudent to obtain manufacturers' quotations for equipment prices and special installation requirements that affect the total cost.
- Fire alarm systems consist of control panels, annunciator panels, battery with rack, charger, and fire alarm actuating and indicating devices. Some fire alarm systems include speakers, telephone lines, door closer controls, and other components. Be careful not to overlook the costs related to installation for these items.

Also be aware of costs for integrated automation instrumentation and terminal devices, control equipment, control wiring, and programming.

- Security equipment includes items such as CCTV, access control, and other detection and identification systems to perform alert and alarm functions. Be sure to consider the costs related to installation for this security equipment, such as for integrated automation instrumentation and terminal devices, control equipment, control wiring, and programming.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

28 13 Access Control

28 13 53 – Security Access Detection

28 13 53.13 Security Access Metal Detectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 SECURITY ACCESS METAL DETECTORS							Labor	Equipment		
0240	Metal detector, hand-held, wand type, unit only				Ea.	89			89	98
0250	Metal detector, walk through portal type, single zone	1 Elec	2	4		3,675	213		3,888	4,350
0260	Multi-zone	"	2	4		4,650	213		4,863	5,450
28 13 53.16 Security Access X-Ray Equipment										
0010 SECURITY ACCESS X-RAY EQUIPMENT										
0290	X-ray machine, desk top, for mail/small packages/letters	1 Elec	4	2	Ea.	3,400	107		3,507	3,875
0300	Conveyor type, incl monitor, minimum		2	4		15,800	213		16,013	17,700
0310	Maximum		2	4		28,300	213		28,513	31,400
0320	X-ray machine, large unit, for airports, incl monitor, min.	2 Elec	1	16		39,600	855		40,455	44,900
0330	Maximum	"	.50	32		68,000	1,700		69,700	77,000
28 13 53.23 Security Access Explosive Detection Equipment										
0010 SECURITY ACCESS EXPLOSIVE DETECTION EQUIPMENT										
0270	Explosives detector, walk through portal type	1 Elec	2	4	Ea.	43,700	213		43,913	48,400
0280	Hand-held, battery operated				"				25,500	28,100

28 16 Intrusion Detection

28 16 16 – Intrusion Detection Systems Infrastructure

28 16 16.50 Intrusion Detection

0010	INTRUSION DETECTION, not including wires & conduits									
0100	Burglar alarm, battery operated, mechanical trigger	1 Elec	4	2	Ea.	275	107		382	460
0200	Electrical trigger		4	2		330	107		437	520
0400	For outside key control, add		8	1		83	53.50		136.50	172
0600	For remote signaling circuitry, add		8	1		124	53.50		177.50	216
0800	Card reader, flush type, standard		2.70	2.963		920	158		1,078	1,250
1000	Multi-code		2.70	2.963		1,175	158		1,333	1,525
1200	Door switches, hinge switch		5.30	1.509		58	80.50		138.50	185
1400	Magnetic switch		5.30	1.509		68.50	80.50		149	197
1600	Exit control locks, horn alarm		4	2		274	107		381	460
1800	Flashing light alarm		4	2		300	107		407	490
2000	Indicating panels, 1 channel		2.70	2.963		365	158		523	635
2200	10 channel	2 Elec	3.20	5		1,250	267		1,517	1,775
2400	20 channel		2	8		2,425	425		2,850	3,325
2600	40 channel		1.14	14.035		4,425	750		5,175	5,975
2800	Ultrasonic motion detector, 12 volt	1 Elec	2.30	3.478		227	186		413	530
3000	Infrared photoelectric detector	"	4	2		188	107		295	365

28 23 Video Surveillance

28 23 13 – Video Surveillance Control and Management Systems

28 23 13.10 Closed Circuit Television System

0010	CLOSED CIRCUIT TELEVISION SYSTEM									
2000	Surveillance, one station (camera & monitor)	2 Elec	2.60	6.154	Total	1,350	330		1,680	1,975
2200	For additional camera stations, add	1 Elec	2.70	2.963	Ea.	750	158		908	1,050
2400	Industrial quality, one station (camera & monitor)	2 Elec	2.60	6.154	Total	2,775	330		3,105	3,550
2600	For additional camera stations, add	1 Elec	2.70	2.963	Ea.	1,700	158		1,858	2,100
2610	For low light, add		2.70	2.963		1,375	158		1,533	1,725
2620	For very low light, add		2.70	2.963		10,100	158		10,258	11,300
2800	For weatherproof camera station, add		1.30	6.154		1,050	330		1,380	1,650
3000	For pan and tilt, add		1.30	6.154		2,700	330		3,030	3,475

28 23 Video Surveillance

28 23 13 – Video Surveillance Control and Management Systems

28 23 13.10 Closed Circuit Television System		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Base Costs Labor Equipment	Total	Total Incl O&P
3200	For zoom lens - remote control, odd, minimum	1 Elec	2	4	Eo.	2,500	213	2,713	3,075
3400	Maximum		2	4		9,125	213	9,338	10,300
3410	For automatic iris for low light, odd		2	4	▼	2,175	213	2,388	2,725
3600	Educational T.V. studio, basic 3 camera system, black & white,								
3800	electrical & electronic equip. only, minimum	4 Elec	.80	40	Total	13,000	2,125	15,125	17,500
4000	Maximum (full console)		.28	114		55,000	6,100	61,100	69,500
4100	As above, but color system, minimum		.28	114		73,000	6,100	79,100	89,500
4120	Maximum	▼	.12	266	▼	317,500	14,200	331,700	371,000
4200	For film chain, black & white, odd	1 Elec	1	8	Eo.	14,800	425	15,225	16,900
4250	Color, add		.25	32		18,000	1,700	19,700	22,400
4400	For video recorders, odd, minimum	▼	1	8		3,125	425	3,550	4,075
4600	Maximum	4 Elec	.40	80	▼	25,900	4,275	30,175	34,900

28 23 23 – Video Surveillance Systems Infrastructure

28 23 23.50 Video Surveillance Equipments

0010	VIDEO SURVEILLANCE EQUIPMENTS								
0200	Video cameras, wireless, hidden in exit signs, clocks, etc., incl. receiver	1 Elec	3	2.667	Eo.	107	142	249	330
0210	Accessories for video recorder, single camera		3	2.667		181	142	323	410
0220	For multiple cameras		3	2.667		1,750	142	1,892	2,150
0230	Video cameras, wireless, for under vehicle searching, complete	▼	2	4	▼	10,100	213	10,313	11,400

28 31 Fire Detection and Alarm

28 31 23 – Fire Detection and Alarm Annunciation Panels and Fire Stations

28 31 23.50 Alarm Panels and Devices

0010	ALARM PANELS AND DEVICES, not including wires & conduits								
3594	Fire, alarm control panel								
3600	4 zone	2 Elec	2	8	Eo.	395	425	820	1,075
3800	8 zone		1	16		775	855	1,630	2,125
4000	12 zone	▼	.67	23.988		2,375	1,275	3,650	4,525
4020	Alarm device	1 Elec	8	1		235	53.50	288.50	340
4050	Actuating device		8	1		335	53.50	388.50	445
4200	Battery and rack		4	2		410	107	517	610
4400	Automatic charger		8	1		580	53.50	633.50	715
4600	Signal bell		8	1		78	53.50	131.50	166
4800	Trouble buzzer or manual station		8	1		82.50	53.50	136	171
5600	Strobe and horn		5.30	1.509		151	80.50	231.50	287
5800	Fire alarm horn		6.70	1.194		60.50	63.50	124	162
6000	Door holder, electro-magnetic		4	2		102	107	209	272
6200	Combination holder and closer		3.20	2.500		122	133	255	335
6600	Drill switch		8	1		365	53.50	418.50	485
6800	Master box		2.70	2.963		6,350	158	6,508	7,200
7000	Break glass station		8	1		55	53.50	108.50	141
7800	Remote annunciator, 8 zone lamp	▼	1.80	4.444		207	237	444	580
8000	12 zone lamp	2 Elec	2.60	6.154		330	330	660	855
8200	16 zone lamp	"	2.20	7.273	▼	415	390	805	1,025

28 31 43 – Fire Detection Sensors

28 31 43.50 Fire and Heat Detectors

0010	FIRE & HEAT DETECTORS								
5000	Detector, rate of rise	1 Elec	8	1	Eo.	50.50	53.50	104	136

28 31 Fire Detection and Alarm

28 31 46 – Smoke Detection Sensors

28 31 46.50 Smoke Detectors		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	SMOKE DETECTORS									
5200	Smoke detector, ceiling type	1 Elec	6.20	1.290	Ea.	109	69		178	223
5400	Duct type	"	3.20	2.500	"	325	133		458	555

28 33 Gas Detection and Alarm

28 33 33 – Gas Detection Sensors

28 33 33.50 Tank Leak Detection Systems

0010	TANK LEAK DETECTION SYSTEMS Liquid and vapor									
0100	For hydrocarbons and hazardous liquids/vapors									
0120	Controller, data acquisition, incl. printer, modem, RS232 port									
0140	24 channel, for use with all probes				Ea.	4,125			4,125	4,525
0160	9 channel, for external monitoring				"	905			905	1,000
0200	Probes									
0210	Well monitoring									
0220	Liquid phase detection				Ea.	470			470	520
0230	Hydrocarbon vapor, fixed position					475			475	525
0240	Hydrocarbon vapor, float mounted					475			475	525
0250	Both liquid and vapor hydrocarbon					475			475	525
0300	Secondary containment, liquid phase									
0310	Pipe trench/manway sump				Ea.	815			815	895
0320	Double wall pipe and manual sump					815			815	895
0330	Double wall fiberglass annular space					320			320	350
0340	Double wall steel tank annular space				▼	335			335	365
0500	Accessories									
0510	Modem, non-dedicated phone line				Ea.	300			300	330
0600	Monitoring, internal									
0610	Automatic tank gauge, incl. overfill				Ea.	1,150			1,150	1,250
0620	Product line				"	1,150			1,150	1,250
0700	Monitoring, special									
0710	Cathodic protection				Ea.	715			715	790
0720	Annular space chemical monitor				"	975			975	1,075

28 39 Mass Notification Systems

28 39 10 – Notification Systems

28 39 10.10 Mass Notification System

0010	MASS NOTIFICATION SYSTEM									
0100	Wireless command center, 10,000 devices	2 Elec	1.33	12.030	Ea.	3,575	640		4,215	4,875
0200	Option, email notification					1,750			1,750	1,925
0210	Remote device supervision & monitor					2,425			2,425	2,650
0300	Antenna VHF or UHF, for medium range	1 Elec	4	2		128	107		235	300
0310	For high-power transmitter		2	4		665	213		878	1,050
0400	Transmitter, 25 watt		4	2		2,000	107		2,107	2,350
0410	40 watt		2.66	3.008		2,675	160		2,835	3,200
0420	100 watt		1.33	6.015		6,700	320		7,020	7,850
0500	Wireless receiver/control module for speaker		8	1		262	53.50		315.50	370
0600	Desktop paging controller, stand alone		4	2		365	107		472	565

Estimating Tips

31 05 00 Common Work Results for Earthwork

• Estimating the actual cost of performing earthwork requires careful consideration of the variables involved. This includes items such as type of soil, whether water will be encountered, dewatering, whether banks need bracing, disposal of excavated earth, and length of haul to fill or spoil sites, etc. If the project has large quantities of cut or fill, consider raising or

lowering the site to reduce costs, while paying close attention to the effect on site drainage and utilities.

- If the project has large quantities of fill, creating a borrow pit on the site can significantly lower the costs.
- It is very important to consider what time of year the project is scheduled for completion. Bad weather can create large cost overruns from dewatering, site repair, and lost productivity from cold weather.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

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31 05 Common Work Results for Earthwork

31 05 13 – Soils for Earthwork

31 05 13.10 Borrow				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	BORROW			R312316-40								
0020	Spread, 200 H.P. dazer, no compaction, 2 mi. RT haul											
0200	Canman borrow			B-15	600	.047	C.Y.	12.35	1.90	4.52	18.77	21.50
0700	Screened laam				600	.047		28	1.90	4.52	34.42	38.50
0800	Tapsail, weed free				600	.047		24.50	1.90	4.52	30.92	35
0900	For 5 mile haul, add			B-34B	200	.040			1.50	3.46	4.96	6.10

31 05 16 – Aggregates for Earthwork

31 05 16.10 Borrow

0010	BORROW		R312316-40											
0020	Spread, with 200 H.P. dazer, na compaction, 2 mi. RT haul													
0100	Bank run gravel	B-15	600	.047	L.C.Y.	22	1.90	4.52	28.42	32				
0300	Crushed stane (1.40 tons per CY) , 1-1/2"		600	.047		28.50	1.90	4.52	34.92	39				
0320	3/4"		600	.047		28.50	1.90	4.52	34.92	39				
0340	1/2"		600	.047		27	1.90	4.52	33.42	37.50				
0360	3/8"		600	.047		25.50	1.90	4.52	31.92	36.50				
0400	Sond, washed, concrete		600	.047		42	1.90	4.52	48.42	54				
0500	Dead ar bank sand		600	.047		17.55	1.90	4.52	23.97	27				
0600	Select structural fill		600	.047		21	1.90	4.52	27.42	31				
0900	Far 5 mile haul, add	B-34B	200	.040			1.50	3.46	4.96	6.10				

31 05 23 – Cement and Concrete for Earthwork

31 05 23.30 Plant Mixed Bituminous Concrete

0010	PLANT MIXED BITUMINOUS CONCRETE											
0020	Asphaltic concrete plant mix (145 lb. per C.F.)						Ton	68			68	75
0040	Asphaltic concrete less than 300 tons add trucking costs											
0050	See Section 31 23 23.20 for hauling costs											
0200	All weather patching mix, hot						Ton	68			68	75
0250	Cold patch							78			78	86
0300	Berm mix							68			68	75

31 06 Schedules for Earthwork

31 06 60 – Schedules for Special Foundations and Load Bearing Elements

31 06 60.14 Piling Special Costs

0010	PILING SPECIAL COSTS											
0011	Piling special casts, pile caps, see Section 03 30 53.40											
0500	Cutoffs, concrete piles, plain	1 Pile	5.50	1.455	Ea.		64.50		64.50		102	
0600	With steel thin shell, add		38	.211			9.35		9.35		14.80	
0700	Steel pile or "H" piles		19	.421			18.70		18.70		29.50	
0800	Wood piles		38	.211	▼		9.35		9.35		14.80	
0900	Pre-augering up to 30' deep, average soil, 24" diameter	B-43	180	.267	L.F.		10.75	14.15	24.90		32	
0920	36" diameter		115	.417			16.85	22	38.85		50.50	
0960	48" diameter		70	.686			27.50	36.50	64		82.50	
0980	60" diameter		50	.960			39	51	90		116	
1000	Testing, any type piles, test load is twice the design load											
1050	50 ton design load, 100 ton test				Ea.				14,000		15,500	
1100	100 ton design load, 200 ton test								20,000		22,000	
1150	150 ton design load, 300 ton test								26,000		28,500	
1200	200 ton design load, 400 ton test								28,000		31,000	
1250	400 ton design load, 800 ton test				▼				32,000		35,000	
1500	Wet conditions, soft damp ground											
1600	Requiring mats for crane, odd								40%		40%	

31 06 Schedules for Earthwork

31 06 60 – Schedules for Special Foundations and Load Bearing Elements

31 06 60.14 Piling Special Costs		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment	30%	30%
1700	Barge mounted driving rig, add									
31 06 60.15 Mobilization										
0010	MOBILIZATION									
0020	Set up & remove, air compressor, 600 CFM	A-5	3.30	5.455	Ea.		200	20.50	220.50	335
0100	1200 CFM	"	2.20	8.182			300	30.50	330.50	495
0200	Crane, with pile leads and pile hammer, 75 ton	B-19	.60	106			4,900	3,075	7,975	11,000
0300	150 ton	"	.36	177			8,175	5,125	13,300	18,300
0500	Drill rig, for caissons, to 36", minimum	B-43	2	24			970	1,275	2,245	2,875
0600	Up to 84"	"	1	48			1,950	2,550	4,500	5,775
0800	Auxiliary bailer, for steam small	A-5	1.66	10.843			395	40.50	435.50	655
0900	Large	"	.83	21.687			795	81.50	876.50	1,325
1100	Rule of thumb: complete pile driving set up, small	B-19	.45	142			6,550	4,100	10,650	14,700
1200	Large	"	.27	237			10,900	6,825	17,725	24,500
1500	Mobilization, barge, by tug boat	B-83	25	.640	Mile		27.50	35.50	63	81

31 11 Clearing and Grubbing

31 11 10 – Clearing and Grubbing Land

31 11 10.10 Clear and Grub Site

0010	CLEAR AND GRUB SITE									
0020	Cut & chip light trees to 6" diam.	B-7	1	48	Acre		1,875	1,675	3,550	4,725
0150	Grub stumps and remove	B-30	2	12			495	1,200	1,695	2,075
0200	Cut & chip medium, trees to 12" diam.	B-7	.70	68.571			2,675	2,400	5,075	6,750
0250	Grub stumps and remove	B-30	1	24			990	2,425	3,415	4,150
0300	Cut & chip heavy, trees to 24" diam.	B-7	.30	160			6,250	5,600	11,850	15,800
0350	Grub stumps and remove	B-30	.50	48			1,975	4,825	6,800	8,350
0400	If burning is allowed, deduct cut & chip								40%	40%
3000	Chipping stumps, to 18" deep, 12" diam.	B-86	20	.400	Ea.		19.55	8.10	27.65	38.50
3040	18" diameter		16	.500			24.50	10.15	34.65	48
3080	24" diameter		14	.571			28	11.60	39.60	55.50
3100	30" diameter		12	.667			32.50	13.50	46	64.50
3120	36" diameter		10	.800			39	16.20	55.20	77.50
3160	48" diameter	▼	8	1	▼		49	20.50	69.50	96.50
5000	Tree thinning, feller buncher, conifer									
5080	Up to 8" diameter	B-93	240	.033	Ea.		1.63	3.04	4.67	5.80
5120	12" diameter		160	.050			2.45	4.56	7.01	8.70
5240	Hardwood, up to 4" diameter		240	.033			1.63	3.04	4.67	5.80
5280	8" diameter		180	.044			2.17	4.05	6.22	7.75
5320	12" diameter		120	.067			3.26	6.10	9.36	11.65
7000	Tree removal, congested area, aerial lift truck									
7040	8" diameter	B-85	7	5.714	Ea.		224	149	373	510
7080	12" diameter		6	6.667			262	174	436	590
7120	18" diameter		5	8			315	209	524	710
7160	24" diameter		4	10			395	262	657	890
7240	36" diameter		3	13.333			525	350	875	1,200
7280	48" diameter		2	20			785	525	1,310	1,775

31 13 Selective Tree and Shrub Removal and Trimming

31 13 13 – Selective Tree and Shrub Removal

31 13 13.10 Selective Clearing		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 SELECTIVE CLEARING							Labor	Equipment		
0020	Clearing brush with brush saw	A-1C	.25	32	Acre		1,175	125	1,300	1,925
0100	By hand	1 Clob	.12	66.667			2,450		2,450	3,775
0300	With dozer, boll and choin, light clearing	B-11A	2	8			340	660	1,000	1,250
0400	Medium clearing		1.50	10.667			455	885	1,340	1,675
0500	With dozer ond brush roke, light		10	1.600			68.50	133	201.50	251
0550	Medium brush to 4" diameter		8	2			85.50	166	251.50	315
0600	Heavy brush to 4" diameter	▼	6.40	2.500	▼		107	207	314	390
1000	Brush mowing, tractor w/rotory mower, no removal									
1020	Light density	B-84	2	4	Acre		196	182	378	495
1040	Medium density		1.50	5.333			261	243	504	660
1080	Heavy density		1	8			390	365	755	995
31 13 13.20 Selective Tree Removal										
0010 SELECTIVE TREE REMOVAL										
0011	With tractor, large tract, firm									
0020	level terroin, no boulders, less than 12" diom. trees									
0300	300 HP dozer, up to 400 trees/acre, 0 to 25% hardwoods	B-10M	.75	16	Acre		715	2,425	3,140	3,775
0340	25% to 50% hardwoods		.60	20			895	3,025	3,920	4,700
0370	75% to 100% hardwoods		.45	26.667			1,200	4,050	5,250	6,275
0400	500 trees/acre, 0% to 25% hardwoods		.60	20			895	3,025	3,920	4,700
0440	25% to 50% hardwoods		.48	25			1,125	3,775	4,900	5,875
0470	75% to 100% hardwoods		.36	33.333			1,500	5,050	6,550	7,825
0500	More than 600 trees/acre, 0 to 25% hardwoods		.52	23.077			1,025	3,500	4,525	5,425
0540	25% to 50% hardwoods		.42	28.571			1,275	4,325	5,600	6,700
0570	75% to 100% hardwoods	▼	.31	38.710	▼		1,725	5,850	7,575	9,100
0900	Large tract clearing per tree									
1500	300 HP dozer, to 12" diameter, softwood	B-10M	320	.038	EO.		1.68	5.70	7.38	8.80
1550	Hardwood		100	.120			5.40	18.15	23.55	28
1600	12" to 24" diameter, softwood		200	.060			2.69	9.10	11.79	14.10
1650	Hardwood		80	.150			6.70	22.50	29.20	35.50
1700	24" to 36" diameter, softwood		100	.120			5.40	18.15	23.55	28
1750	Hardwood		50	.240			10.75	36.50	47.25	56.50
1800	36" to 48" diameter, softwood		70	.171			7.70	26	33.70	40
1850	Hardwood	▼	35	.343	▼		15.35	52	67.35	80.50
2000	Stump removal on site by hydraulic backhoe, 1-1/2 C.Y.									
2040	4" to 6" diameter	B-17	60	.533	EO.		21	13.05	34.05	46.50
2050	8" to 12" diameter	B-30	33	.727			30	73	103	127
2100	14" to 24" diameter		25	.960			39.50	96.50	136	167
2150	26" to 36" diameter		16	1.500			62	151	213	261
3000	Remove selective trees, on site using choin sows ond chipper,									
3050	not incl. stumps, up to 6" diameter	B-7	18	2.667	EO.		104	93	197	263
3100	8" to 12" diameter		12	4			156	140	296	395
3150	14" to 24" diameter		10	4.800			187	168	355	475
3200	26" to 36" diameter	▼	8	6	▼		234	210	444	590
3300	Machine load, 2 mile haul to dump, 12" diom. tree	A-3B	8	2	▼		86.50	152	238.50	298

31 14 Earth Stripping and Stockpiling

31 14 13 – Soil Stripping and Stockpiling

31 14 13.23 Topsoil Stripping and Stockpiling		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
TOPSOIL STRIPPING AND STOCKPILING							Labor	Equipment		
0010	TOPSOIL STRIPPING AND STOCKPILING									
0020	200 H.P. dozer, ideal conditions	B-10B	2300	.005	C.Y.		.23	.58	.81	.99
0100	Adverse conditions	"	1150	.010			.47	1.15	1.62	1.98
0200	300 H.P. dozer, ideal conditions	B-10M	3000	.004			.18	.61	.79	.94
0300	Adverse conditions	"	1650	.007			.33	1.10	1.43	1.71
0400	400 H.P. dozer, ideal conditions	B-10X	3900	.003			.14	.62	.76	.89
0500	Adverse conditions	"	2000	.006			.27	1.20	1.47	1.74
0600	Cloy, dry and soft, 200 H.P. dozer, ideal conditions	B-10B	1600	.008			.34	.83	1.17	1.42
0700	Adverse conditions	"	800	.015			.67	1.66	2.33	2.84
1000	Medium hard, 300 H.P. dazer, ideal conditions	B-10M	2000	.006			.27	.91	1.18	1.41
1100	Adverse conditions	"	1100	.011			.49	1.65	2.14	2.56
1200	Very hard, 400 H.P. dozer, ideal conditions	B-10X	2600	.005			.21	.93	1.14	1.34
1300	Adverse conditions	"	1340	.009	▼		.40	1.80	2.20	2.59
1400	Loam or topsail, remove and stockpile on site									
1420	6" deep, 200' haul	B-10B	865	.014	C.Y.		.62	1.53	2.15	2.63
1430	300' haul		520	.023			1.03	2.55	3.58	4.38
1440	500' haul		225	.053	▼		2.39	5.90	8.29	10.15
1450	Alternate methad: 6" deep, 200' haul		5090	.002	S.Y.		.11	.26	.37	.45
1460	500' haul	▼	1325	.009	"		.41	1	1.41	1.72
1500	Loom or topsail, remove/stockpile on site									
1510	By hond, 6" deep, 50' haul, less than 100 S.Y.	B-1	100	.240	S.Y.		8.95		8.95	13.80
1520	By skid steer, 6" deep, 100' haul, 101-500 S.Y.	B-62	500	.048			1.93	.35	2.28	3.33
1530	100' haul, 501-900 S.Y.	"	900	.027			1.07	.19	1.26	1.85
1540	200' haul, 901-1100 S.Y.	B-63	1000	.040			1.55	.17	1.72	2.57
1550	By dazer, 200' haul, 1101-4000 S.Y.	B-10B	4000	.003	▼		.13	.33	.46	.56

31 22 Grading

31 22 13 – Rough Grading

31 22 13.20 Rough Grading Sites

0010	ROUGH GRADING SITES									
0100	Rough grade sites 400 S.F. or less	B-1	2	12	Eq.		450		450	690
0120	410-1000 S.F.	"	1	24			895		895	1,375
0130	1100-3000 S.F.	B-62	1.50	16			640	116	756	1,125
0140	3100-5000 S.F.	"	1	24			965	174	1,139	1,675
0150	5100-8000 S.F.	B-63	1	40			1,550	174	1,724	2,575
0160	8100-10000 S.F.	"	.75	53.333			2,075	233	2,308	3,425
0170	8100-10000 S.F.	B-10L	1	12			540	480	1,020	1,350
0200	Rough grade open sites 10000-20000 S.F.	B-11L	1.80	8.889			380	395	775	1,000
0210	20100-25000 S.F.		1.40	11.429			490	505	995	1,300
0220	25100-30000 S.F.		1.20	13.333			570	590	1,160	1,525
0230	30100-35000 S.F.		1	16			685	705	1,390	1,825
0240	35100-40000 S.F.		.90	17.778			760	785	1,545	2,025
0250	40100-45000 S.F.		.80	20			855	885	1,740	2,275
0260	45100-50000 S.F.		.72	22.222			950	980	1,930	2,525
0270	50100-75000 S.F.		.50	32			1,375	1,425	2,800	3,650
0280	75100-100000 S.F.		.36	44.444			1,900	1,975	3,875	5,050

31 22 Grading

31 22 16 – Fine Grading

31 22 16.10 Finish Grading		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	FINISH GRADING									
0012	Finish grading area to be paved with grader, small area	B-11L	400	.040	S.Y.		1.71	1.77	3.48	4.55
0100	Large area		2000	.008			.34	.35	.69	.91
1100	Fine grade for slab on grade, machine		1040	.015			.66	.68	1.34	1.76
1150	Hand grading	B-18	700	.034	↓		1.28	.07	1.35	2.04
3500	Finish grading lagoon bottoms	B-11L	4	4	M.S.F.		171	177	348	455

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.13 Excavating, Trench

0010	EXCAVATING, TRENCH									
0011	Or continuous footing									
0020	Common earth with no sheeting or dewatering included									
0050	1' to 4' deep, 3/8 C.Y. excavator	B-11C	150	.107	B.C.Y.		4.56	2.44	7	9.65
0060	1/2 C.Y. excavator	B-11M	200	.080			3.42	1.99	5.41	7.45
0090	4' to 6' deep, 1/2 C.Y. excavator	"	200	.080			3.42	1.99	5.41	7.45
0100	5/8 C.Y. excavator	B-12Q	250	.064			2.78	2.38	5.16	6.85
0110	3/4 C.Y. excavator	B-12F	300	.053			2.32	2.21	4.53	5.95
0300	1/2 C.Y. excavator, truck mounted	B-12J	200	.080			3.48	4.41	7.89	10.15
0500	6' to 10' deep, 3/4 C.Y. excavator	B-12F	225	.071			3.09	2.94	6.03	7.95
0510	1 C.Y. excavator	B-12A	400	.040			1.74	2.04	3.78	4.90
0600	1 C.Y. excavator, truck mounted	B-12K	400	.040			1.74	2.51	4.25	5.40
0610	1-1/2 C.Y. excavator	B-12B	600	.027			1.16	1.72	2.88	3.66
0900	10' to 14' deep, 3/4 C.Y. excavator	B-12F	200	.080			3.48	3.31	6.79	8.95
0910	1 C.Y. excavator	B-12A	360	.044			1.93	2.26	4.19	5.45
1000	1-1/2 C.Y. excavator	B-12B	540	.030			1.29	1.91	3.20	4.07
1300	14' to 20' deep, 1 C.Y. excavator	B-12A	320	.050			2.17	2.55	4.72	6.10
1310	1-1/2 C.Y. excavator	B-12B	480	.033			1.45	2.15	3.60	4.57
1320	2-1/2 C.Y. excavator	B-12S	765	.021			.91	2.14	3.05	3.74
1340	20' to 24' deep, 1 C.Y. excavator	B-12A	288	.056			2.41	2.83	5.24	6.80
1342	1-1/2 C.Y. excavator	B-12B	432	.037			1.61	2.39	4	5.10
1344	2-1/2 C.Y. excavator	B-12S	685	.023			1.02	2.39	3.41	4.18
1352	4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	188	.085			3.70	5.15	8.85	11.30
1354	5/8 C.Y. excavator	"	235	.068			2.96	4.11	7.07	9.05
1356	3/4 C.Y. excavator	B-13G	282	.057			2.47	2.65	5.12	6.70
1362	6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	212	.075			3.28	3.52	6.80	8.85
1370	1 C.Y. excavator	B-13D	376	.043			1.85	2.39	4.24	5.45
1371	1-1/2 C.Y. excavator	B-13E	564	.028			1.23	1.98	3.21	4.05
1374	10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	188	.085			3.70	3.97	7.67	10
1375	1 C.Y. excavator	B-13D	338	.047			2.06	2.66	4.72	6.05
1376	1-1/2 C.Y. excavator	B-13E	508	.032			1.37	2.20	3.57	4.50
1381	14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	301	.053			2.31	2.99	5.30	6.80
1382	1-1/2 C.Y. excavator	B-13E	451	.035			1.54	2.47	4.01	5.10
1383	2-1/2 C.Y. excavator	B-13J	720	.022			.97	2.39	3.36	4.11
1386	20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	271	.059			2.57	3.32	5.89	7.55
1387	1-1/2 C.Y. excavator	B-13E	406	.039			1.71	2.75	4.46	5.65
1388	2-1/2 C.Y. excavator	B-13J	645	.025	↓		1.08	2.67	3.75	4.59
1391	Shoring by S.F./day trench wall protected loose mat., 4' W	B-6	3200	.008	SF Wall	.55	.30	.11	.96	1.19
1392	Rent shoring per week per S.F. wall protected, loose mat., 4' W					1.52			1.52	1.68
1395	Hydraulic shoring, S.F. trench wall protected stable mat., 4' W	2 Clab	2700	.006	↓	.17	.22		.39	.53

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.13 Excavating, Trench		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1397	semi-stable material, 4' W	2 Clob	2400	.007	SF Wall	.24	.24		.48	.65
1398	Rent hydraulic sharing per day/S.F. wall, stable mot., 4' W					.29			.29	.32
1399	semi-stable material					.36			.36	.39
1400	By hond with pick ond shavel 2' to 6' deep, light sail	1 Clob	8	1	B.C.Y.		36.50		36.50	56.50
1500	Heavy sail	"	4	2	"		73.50		73.50	113
1700	For tamping backfilled trenches, air tamp, add	A-1G	100	.080	E.C.Y.		2.93	.56	3.49	5.15
1900	Vibrating plote, odd	B-18	180	.133	"		4.98	.26	5.24	8
2100	Trim sides ond battam far concrete pours, camman earth		1500	.016	S.F.		.60	.03	.63	.95
2300	Hardpan		600	.040	"		1.49	.08	1.57	2.38
2400	Pier and spread footing excavation, add to above				B.C.Y.				30%	30%
3000	Backfill trench, F.E. loader, wheel mtd., 1 C.Y. bucket									
3020	Minimal houl	B-10R	400	.030	L.C.Y.		1.34	.74	2.08	2.86
3040	100' houl	"	200	.060			2.69	1.48	4.17	5.70
3080	2-1/4 C.Y. bucket, minimum haul	B-10T	600	.020			.90	.87	1.77	2.33
3090	100' haul	"	300	.040	▼		1.79	1.74	3.53	4.65
5020	Loam & Sandy clay with na sheeting or dewatering included									
5050	1' to 4' deep, 3/8 C.Y. tractor loader/backhae	B-11C	162	.099	B.C.Y.		4.23	2.25	6.48	8.95
5060	1/2 C.Y. excavator	B-11M	216	.074			3.17	1.84	5.01	6.85
5080	4' to 6' deep, 1/2 C.Y. excavator	"	216	.074			3.17	1.84	5.01	6.85
5090	5/8 C.Y. excavator	B-12Q	276	.058			2.52	2.15	4.67	6.20
5100	3/4 C.Y. excavator	B-12F	324	.049			2.15	2.04	4.19	5.55
5130	1/2 C.Y. excavator, truck mounted	B-12J	216	.074			3.22	4.08	7.30	9.40
5140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	243	.066			2.86	2.72	5.58	7.35
5150	1 C.Y. excovotor	B-12A	432	.037			1.61	1.89	3.50	4.54
5160	1 C.Y. excavator, truck mounted	B-12K	432	.037			1.61	2.33	3.94	5
5170	1-1/2 C.Y. excavator	B-12B	648	.025			1.07	1.59	2.66	3.39
5190	10' to 14' deep, 3/4 C.Y. excovotor	B-12F	216	.074			3.22	3.07	6.29	8.30
5200	1 C.Y. excovotor	B-12A	389	.041			1.79	2.09	3.88	5.05
5210	1-1/2 C.Y. excovotor	B-12B	583	.027			1.19	1.77	2.96	3.76
5250	14' to 20' deep, 1 C.Y. excovotor	B-12A	346	.046			2.01	2.36	4.37	5.65
5260	1-1/2 C.Y. excavator	B-12B	518	.031			1.34	1.99	3.33	4.24
5270	2-1/2 C.Y. excavator	B-12S	826	.019			.84	1.98	2.82	3.47
5300	20' to 24' deep, 1 C.Y. excavator	B-12A	311	.051			2.24	2.62	4.86	6.30
5310	1-1/2 C.Y. excovatar	B-12B	467	.034			1.49	2.21	3.70	4.70
5320	2-1/2 C.Y. excovotor	B-12S	740	.022			.94	2.21	3.15	3.87
5352	4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	205	.078			3.39	4.71	8.10	10.40
5354	5/8 C.Y. excovotor	"	257	.062			2.71	3.76	6.47	8.25
5356	3/4 C.Y. excavator	B-13G	308	.052			2.26	2.42	4.68	6.10
5362	6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	231	.069			3.01	3.23	6.24	8.15
5364	1 C.Y. excovotor	B-13D	410	.039			1.70	2.19	3.89	5
5366	1-1/2 C.Y. excavator	B-13E	616	.026			1.13	1.81	2.94	3.71
5370	10' to 14' deep, 3/4 C.Y. excovatar w/trench bax	B-13G	205	.078			3.39	3.64	7.03	9.20
5372	1 C.Y. excavator	B-13D	370	.043			1.88	2.43	4.31	5.55
5374	1-1/2 C.Y. excavator	B-13E	554	.029			1.25	2.01	3.26	4.13
5382	14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	329	.049			2.11	2.73	4.84	6.25
5384	1-1/2 C.Y. excovatar	B-13E	492	.033			1.41	2.27	3.68	4.65
5386	2-1/2 C.Y. excavator	B-13J	780	.021			.89	2.21	3.10	3.79
5392	20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	295	.054			2.36	3.05	5.41	6.95
5394	1-1/2 C.Y. excovatar	B-13E	444	.036			1.57	2.51	4.08	5.15
5396	2-1/2 C.Y. excovatar	B-13J	695	.023	▼		1	2.48	3.48	4.25
6020	Sand & gravel with na sheeting or dewotering included									
6050	1' to 4' deep, 3/8 C.Y. excavator	B-11C	165	.097	B.C.Y.		4.15	2.21	6.36	8.80
6060	1/2 C.Y. excavator	B-11M	220	.073	▼		3.11	1.81	4.92	6.75

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.13 Excavating, Trench		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
6080	4' to 6' deep, 1/2 C.Y. excavator	B-11M	220	.073	B.C.Y.		3.11	1.81	4.92	6.75
6090	5/8 C.Y. excavator	B-12Q	275	.058			2.53	2.16	4.69	6.25
6100	3/4 C.Y. excavator	B-12F	330	.048			2.11	2.01	4.12	5.45
6130	1/2 C.Y. excavator, truck mounted	B-12J	220	.073			3.16	4.01	7.17	9.25
6140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	248	.065			2.80	2.67	5.47	7.20
6150	1 C.Y. excavator	B-12A	440	.036			1.58	1.85	3.43	4.45
6160	1 C.Y. excavator, truck mounted	B-12K	440	.036			1.58	2.28	3.86	4.92
6170	1-1/2 C.Y. excavator	B-12B	660	.024			1.05	1.56	2.61	3.33
6190	10' to 14' deep, 3/4 C.Y. excavator	B-12F	220	.073			3.16	3.01	6.17	8.15
6200	1 C.Y. excavator	B-12A	396	.040			1.76	2.06	3.82	4.94
6210	1-1/2 C.Y. excavator	B-12B	594	.027			1.17	1.74	2.91	3.70
6250	14' to 20' deep, 1 C.Y. excavator	B-12A	352	.045			1.97	2.31	4.28	5.55
6260	1-1/2 C.Y. excavator	B-12B	528	.030			1.32	1.95	3.27	4.16
6270	2-1/2 C.Y. excavator	B-12S	840	.019			.83	1.95	2.78	3.40
6300	20' to 24' deep, 1 C.Y. excavator	B-12A	317	.050			2.19	2.57	4.76	6.20
6310	1-1/2 C.Y. excavator	B-12B	475	.034			1.46	2.17	3.63	4.63
6320	2-1/2 C.Y. excavator	B-12S	755	.021			.92	2.17	3.09	3.79
6352	4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	209	.077			3.33	4.62	7.95	10.20
6354	5/8 C.Y. excavator	"	261	.061			2.66	3.70	6.36	8.15
6356	3/4 C.Y. excavator	B-13G	314	.051			2.21	2.38	4.59	6
6362	6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	236	.068			2.95	3.16	6.11	8
6364	1 C.Y. excavator	B-13D	418	.038			1.66	2.15	3.81	4.91
6366	1-1/2 C.Y. excavator	B-13E	627	.026			1.11	1.78	2.89	3.65
6370	10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	209	.077			3.33	3.57	6.90	9.05
6372	1 C.Y. excavator	B-13D	376	.043			1.85	2.39	4.24	5.45
6374	1-1/2 C.Y. excavator	B-13E	564	.028			1.23	1.98	3.21	4.05
6382	14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	334	.048			2.08	2.69	4.77	6.15
6384	1-1/2 C.Y. excavator	B-13E	502	.032			1.38	2.22	3.60	4.56
6386	2-1/2 C.Y. excavator	B-13J	790	.020			.88	2.18	3.06	3.74
6392	20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	301	.053			2.31	2.99	5.30	6.80
6394	1-1/2 C.Y. excavator	B-13E	452	.035			1.54	2.47	4.01	5.05
6396	2-1/2 C.Y. excavator	B-13J	710	.023	▼		.98	2.42	3.40	4.17
7020	Dense hard clay with no sheeting or dewatering included									
7050	1' to 4' deep, 3/8 C.Y. excavator	B-11C	132	.121	B.C.Y.		5.20	2.77	7.97	10.95
7060	1/2 C.Y. excavator	B-11M	176	.091			3.89	2.26	6.15	8.45
7080	4' to 6' deep, 1/2 C.Y. excavator	"	176	.091			3.89	2.26	6.15	8.45
7090	5/8 C.Y. excavator	B-12Q	220	.073			3.16	2.70	5.86	7.80
7100	3/4 C.Y. excavator	B-12F	264	.061			2.63	2.51	5.14	6.80
7130	1/2 C.Y. excavator, truck mounted	B-12J	176	.091			3.95	5	8.95	11.55
7140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	198	.081			3.51	3.34	6.85	9.05
7150	1 C.Y. excavator	B-12A	352	.045			1.97	2.31	4.28	5.55
7160	1 C.Y. excavator, truck mounted	B-12K	352	.045			1.97	2.85	4.82	6.15
7170	1-1/2 C.Y. excavator	B-12B	528	.030			1.32	1.95	3.27	4.16
7190	10' to 14' deep, 3/4 C.Y. excavator	B-12F	176	.091			3.95	3.76	7.71	10.20
7200	1 C.Y. excavator	B-12A	317	.050			2.19	2.57	4.76	6.20
7210	1-1/2 C.Y. excavator	B-12B	475	.034			1.46	2.17	3.63	4.63
7250	14' to 20' deep, 1 C.Y. excavator	B-12A	282	.057			2.47	2.89	5.36	6.95
7260	1-1/2 C.Y. excavator	B-12B	422	.038			1.65	2.44	4.09	5.20
7270	2-1/2 C.Y. excavator	B-12S	675	.024			1.03	2.42	3.45	4.24
7300	20' to 24' deep, 1 C.Y. excavator	B-12A	254	.063			2.74	3.21	5.95	7.70
7310	1-1/2 C.Y. excavator	B-12B	380	.042			1.83	2.71	4.54	5.80
7320	2-1/2 C.Y. excavator	B-12S	605	.026			1.15	2.71	3.86	4.74

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.14 Excavating, Utility Trench		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	EXCAVATING, UTILITY TRENCH									
0011	Common earth									
0050	Trenching with chain trencher, 12 H.P., operator walking									
0100	4" wide trench, 12" deep	B-53	800	.010	L.F.		.47	.09	.56	.81
0150	18" deep		750	.011			.50	.10	.60	.86
0200	24" deep		700	.011			.54	.10	.64	.93
0300	6" wide trench, 12" deep		650	.012			.58	.11	.69	1
0350	18" deep		600	.013			.63	.12	.75	1.08
0400	24" deep		550	.015			.68	.13	.81	1.18
0450	36" deep		450	.018			.84	.16	1	1.44
0600	8" wide trench, 12" deep		475	.017			.79	.15	.94	1.36
0650	18" deep		400	.020			.94	.18	1.12	1.63
0700	24" deep		350	.023			1.08	.20	1.28	1.85
0750	36" deep	▼	300	.027	▼		1.25	.24	1.49	2.16
1000	Backfill by hand including compaction, add									
1050	4" wide trench, 12" deep	A-1G	800	.010	L.F.		.37	.07	.44	.65
1100	18" deep		530	.015			.55	.11	.66	.97
1150	24" deep		400	.020			.73	.14	.87	1.28
1300	6" wide trench, 12" deep		540	.015			.54	.10	.64	.95
1350	18" deep		405	.020			.72	.14	.86	1.27
1400	24" deep		270	.030			1.09	.21	1.30	1.91
1450	36" deep		180	.044			1.63	.31	1.94	2.85
1600	8" wide trench, 12" deep		400	.020			.73	.14	.87	1.28
1650	18" deep		265	.030			1.11	.21	1.32	1.94
1700	24" deep		200	.040			1.47	.28	1.75	2.57
1750	36" deep	▼	135	.059	▼		2.17	.41	2.58	3.81
2000	Chain trencher, 40 H.P. operator riding									
2050	6" wide trench and backfill, 12" deep	B-54	1200	.007	L.F.		.31	.28	.59	.79
2100	18" deep		1000	.008			.38	.34	.72	.94
2150	24" deep		975	.008			.39	.35	.74	.97
2200	36" deep		900	.009			.42	.38	.80	1.04
2250	48" deep		750	.011			.50	.45	.95	1.26
2300	60" deep		650	.012			.58	.52	1.10	1.45
2400	8" wide trench and backfill, 12" deep		1000	.008			.38	.34	.72	.94
2450	18" deep		950	.008			.40	.36	.76	.99
2500	24" deep		900	.009			.42	.38	.80	1.04
2550	36" deep		800	.010			.47	.42	.89	1.18
2600	48" deep		650	.012			.58	.52	1.10	1.45
2700	12" wide trench and backfill, 12" deep		975	.008			.39	.35	.74	.97
2750	18" deep		860	.009			.44	.39	.83	1.09
2800	24" deep		800	.010			.47	.42	.89	1.18
2850	36" deep		725	.011			.52	.47	.99	1.30
3000	16" wide trench and backfill, 12" deep		835	.010			.45	.41	.86	1.13
3050	18" deep		750	.011			.50	.45	.95	1.26
3100	24" deep	▼	700	.011	▼		.54	.49	1.03	1.35
3200	Compaction with vibratory plate, add								35%	35%
5100	Hand excavate and trim for pipe bells after trench excavation									
5200	8" pipe	1 Clab	155	.052	L.F.		1.89		1.89	2.92
5300	18" pipe	"	130	.062	"		2.26		2.26	3.48

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.16 Structural Excavation for Minor Structures			Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P	
Labor	Equipment											
0010	STRUCTURAL EXCAVATION FOR MINOR STRUCTURES		R312316-40									
0015	Hand, pits to 6' deep, sandy soil		1 Clob	8	1	B.C.Y.		36.50		36.50	56.50	
0100	Heavy soil or cloy			4	2			73.50		73.50	113	
0300	Pits 6'' to 12' deep, sandy soil			5	1.600			58.50		58.50	90.50	
0500	Heavy soil or cloy			3	2.667			97.50		97.50	151	
0700	Pits 12' to 18' deep, sandy soil			4	2			73.50		73.50	113	
0900	Heavy soil or cloy			2	4			147		147	226	
1100	Hand loading trucks from stock pile, sandy soil			12	.667			24.50		24.50	37.50	
1300	Heavy soil or cloy			8	1			36.50		36.50	56.50	
1500	For wet or muck hand excovotion, add to above									50%	50%	
6000	Mochine excovotion, for spread and mot footings, elevotor pits, and small building foundations											
6030	Common earth, hydraulic bockhoe, 1/2 C.Y. bucket		B-12E	55	.291	B.C.Y.		12.65	8.15	20.80	28.50	
6035	3/4 C.Y. bucket		B-12F	90	.178			7.70	7.35	15.05	19.90	
6040	1 C.Y. bucket		B-12A	108	.148			6.45	7.55	14	18.15	
6050	1-1/2 C.Y. bucket		B-12B	144	.111			4.83	7.15	11.98	15.30	
6060	2 C.Y. bucket		B-12C	200	.080			3.48	5.90	9.38	11.75	
6070	Sond and gravel, 3/4 C.Y. bucket		B-12F	100	.160			6.95	6.60	13.55	17.90	
6080	1 C.Y. bucket		B-12A	120	.133			5.80	6.80	12.60	16.30	
6090	1-1/2 C.Y. bucket		B-12B	160	.100			4.35	6.45	10.80	13.75	
6100	2 C.Y. bucket		B-12C	220	.073			3.16	5.35	8.51	10.75	
6110	Cloy, till, or blasted rock, 3/4 C.Y. bucket		B-12F	80	.200			8.70	8.30	17	22.50	
6120	1 C.Y. bucket		B-12A	95	.168			7.30	8.60	15.90	20.50	
6130	1-1/2 C.Y. bucket		B-12B	130	.123			5.35	7.95	13.30	16.85	
6140	2 C.Y. bucket		B-12C	175	.091			3.97	6.70	10.67	13.45	
6230	Sondy cloy & loom, hydroulic bockhoe, 1/2 C.Y. bucket		B-12E	60	.267			11.60	7.45	19.05	26	
6235	3/4 C.Y. bucket		B-12F	98	.163			7.10	6.75	13.85	18.30	
6240	1 C.Y. bucket		B-12A	116	.138			6	7	13	16.90	
6250	1-1/2 C.Y. bucket		B-12B	156	.103			4.46	6.60	11.06	14.05	
9010	For mobilization or demobilization, see Section 01 54 36.50											
9020	For dewatering, see Section 31 23 19.20											
9022	For larger structures, see Bulk Excovotion, Section 31 23 16.42											
9024	For looding onto trucks, add									15%	15%	
9026	For hauling, see Section 31 23 23.20											
9030	For sheeting or soldier bms/logging, see Section 31 52 16.10											
9040	For trench excovotion of strip ftgs, see Section 31 23 16.13											

31 23 16.26 Rock Removal

0010	ROCK REMOVAL	R312316-40										
0015	Drilling only rock, 2" hole for rock bolts		B-47	316	.076	L.F.			3.10	5.15	8.25	10.40
0800	2-1/2" hole for pre-splitting			600	.040				1.63	2.70	4.33	5.45
4600	Quorry operations, 2-1/2" to 3-1/2" diameter			715	.034				1.37	2.27	3.64	4.60

31 23 16.30 Drilling and Blasting Rock

0010	DRILLING AND BLASTING ROCK											
0020	Rock, open face, under 1500 C.Y.		B-47	225	.107	B.C.Y.		3.15	4.35	7.20	14.70	18.05
0100	Over 1500 C.Y.			300	.080			3.15	3.26	5.40	11.81	14.40
0200	Areas where blasting mats are required, under 1500 C.Y.			175	.137			3.15	5.60	9.25	18	22
0250	Over 1500 C.Y.			250	.096			3.15	3.91	6.50	13.56	16.60
0300	Bulk drilling and blasting, can vary greotly, overoge									9.65	12.20	
0500	Pits, overoge									25.50	31.50	
1300	Deep hole method, up to 1500 C.Y.		B-47	50	.480			3.15	19.55	32.50	55.20	69
1400	Over 1500 C.Y.			66	.364			3.15	14.85	24.50	42.50	53
1900	Restrcted areas, up to 1500 C.Y.			13	1.846			3.15	75.50	125	203.65	255

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.30 Drilling and Blasting Rock		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2000	Over 1500 C.Y.	B-47	20	1.200	B.C.Y.	3.15	49	81	133.15	167
2200	Trenches, up to 1500 C.Y.		22	1.091		9.15	44.50	74	127.65	159
2300	Over 1500 C.Y.		26	.923		9.15	37.50	62.50	109.15	136
2500	Pier holes, up to 1500 C.Y.		22	1.091		3.15	44.50	74	121.65	152
2600	Over 1500 C.Y.		31	.774		3.15	31.50	52.50	87.15	109
2800	Boulders under 1/2 C.Y., loaded on truck, no hauling	B-100	80	.150			6.70	12	18.70	23.50
2900	Boulders, drilled, blasted	B-47	100	.240		3.15	9.80	16.20	29.15	36.50
3100	Jackhammer operators with foreman compressor, air tools	B-9	1	40	Day		1,475	234	1,709	2,525
3300	Track drill, compressor, operator and foreman	B-47	1	24	"		980	1,625	2,605	3,275
3500	Blasting caps				Ea.	6.25			6.25	6.85
3700	Explosives					.46			.46	.51
3900	Blasting mats, rent, for first day					144			144	158
4000	Per added day					48			48	53
4200	Preblast survey for 6 room house, individual lot, minimum	A-6	2.40	6.667			305	29.50	334.50	505
4300	Maximum	"	1.35	11.852			540	53	593	890
4500	City block within zone of influence, minimum	A-8	25200	.001	S.F.		.06		.06	.10
4600	Maximum	"	15100	.002	"		.10		.10	.17

31 23 16.42 Excavating, Bulk Bank Measure

0010	EXCAVATING, BULK BANK MEASURE	R312316-40								
0011	Common earth piled									
0020	For loading onto trucks, add								15%	15%
0050	For mobilization and demobilization, see Section 01 54 36.50	R312316-45								
0100	For hauling, see Section 31 23 23.20									
0200	Excavator, hydraulic, crawler mtd., 1 C.Y. cap. = 100 C.Y./hr.	B-12A	800	.020	B.C.Y.		.87	1.02	1.89	2.45
0250	1-1/2 C.Y. cap. = 125 C.Y./hr.	B-12B	1000	.016			.70	1.03	1.73	2.19
0260	2 C.Y. cap. = 165 C.Y./hr.	B-12C	1320	.012			.53	.89	1.42	1.78
0300	3 C.Y. cap. = 260 C.Y./hr.	B-12D	2080	.008			.33	1.17	1.50	1.80
0305	3-1/2 C.Y. cap. = 300 C.Y./hr.	"	2400	.007			.29	1.02	1.31	1.56
0310	Wheel mounted, 1/2 C.Y. cap. = 40 C.Y./hr.	B-12E	320	.050			2.17	1.40	3.57	4.86
0360	3/4 C.Y. cap. = 60 C.Y./hr.	B-12F	480	.033			1.45	1.38	2.83	3.73
0500	Clamshell, 1/2 C.Y. cap. = 20 C.Y./hr.	B-12G	160	.100			4.35	4.51	8.86	11.60
0550	1 C.Y. cap. = 35 C.Y./hr.	B-12H	280	.057			2.48	4.36	6.84	8.60
0950	Dragline, 1/2 C.Y. cap. = 30 C.Y./hr.	B-12I	240	.067			2.90	3.75	6.65	8.55
1000	3/4 C.Y. cap. = 35 C.Y./hr.	"	280	.057			2.48	3.22	5.70	7.35
1050	1-1/2 C.Y. cap. = 65 C.Y./hr.	B-12P	520	.031			1.34	2.33	3.67	4.61
1200	Front end loader, track mtd., 1-1/2 C.Y. cap. = 70 C.Y./hr.	B-10N	560	.021			.96	.93	1.89	2.49
1250	2-1/2 C.Y. cap. = 95 C.Y./hr.	B-10O	760	.016			.71	1.26	1.97	2.47
1300	3 C.Y. cap. = 130 C.Y./hr.	B-10P	1040	.012			.52	1.15	1.67	2.05
1350	5 C.Y. cap. = 160 C.Y./hr.	B-10Q	1280	.009			.42	1.20	1.62	1.96
1500	Wheel mounted, 3/4 C.Y. cap. = 45 C.Y./hr.	B-10R	360	.033			1.49	.82	2.31	3.18
1550	1-1/2 C.Y. cap. = 80 C.Y./hr.	B-10S	640	.019			.84	.58	1.42	1.92
1600	2-1/4 C.Y. cap. = 100 C.Y./hr.	B-10T	800	.015			.67	.65	1.32	1.74
1650	5 C.Y. cap. = 185 C.Y./hr.	B-10U	1480	.008			.36	.71	1.07	1.33
1800	Hydraulic excavator, truck mtd. 1/2 C.Y. = 30 C.Y./hr.	B-12J	240	.067			2.90	3.67	6.57	8.45
1850	48 inch bucket, 1 C.Y. = 45 C.Y./hr.	B-12K	360	.044			1.93	2.79	4.72	6
3700	Shovel, 1/2 C.Y. capacity = 55 C.Y./hr.	B-12L	440	.036			1.58	1.69	3.27	4.27
3750	3/4 C.Y. capacity = 85 C.Y./hr.	B-12M	680	.024			1.02	1.39	2.41	3.09
3800	1 C.Y. capacity = 120 C.Y./hr.	B-12N	960	.017			.72	1.30	2.02	2.54
3850	1-1/2 C.Y. capacity = 160 C.Y./hr.	B-12O	1280	.013			.54	.98	1.52	1.91
3900	3 C.Y. cap. = 250 C.Y./hr.	B-12T	2000	.008			.35	.80	1.15	1.41
4000	For soft soil or sand, deduct								15%	15%
4100	For heavy soil or stiff clay, add								60%	60%

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.42 Excavating, Bulk Bank Measure		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4200	For wet excavation with clamshell or dragline, add				B.C.Y.				100%	100%
4250	All other equipment, add								50%	50%
4400	Clamshell in sheeting or cofferdam, minimum	B-12H	160	.100			4.35	7.65	12	15.05
4450	Maximum	"	60	.267	▼		11.60	20.50	32.10	40
5000	Excavating, bulk bank measure, sandy clay & loam piled									
5020	For loading onto trucks, add								15%	15%
5100	Excavator, hydraulic, crawler mtd., 1 C.Y. cap. = 120 C.Y./hr.	B-12A	960	.017	B.C.Y.		.72	.85	1.57	2.04
5150	1-1/2 C.Y. cap. = 150 C.Y./hr.	B-12B	1200	.013			.58	.86	1.44	1.82
5300	2 C.Y. cap. = 195 C.Y./hr.	B-12C	1560	.010			.45	.75	1.20	1.51
5400	3 C.Y. cap. = 300 C.Y./hr.	B-12D	2400	.007			.29	1.02	1.31	1.56
5500	3.5 C.Y. cap. = 350 C.Y./hr.	"	2800	.006			.25	.87	1.12	1.34
5610	Wheel mounted, 1/2 C.Y. cap. = 44 C.Y./hr.	B-12E	352	.045			1.97	1.27	3.24	4.42
5660	3/4 C.Y. cap. = 66 C.Y./hr.	B-12F	528	.030	▼		1.32	1.25	2.57	3.39
8000	For hauling excavated material, see Section 31 23 23.20									

31 23 16.46 Excavating, Bulk, Dozer

0010	EXCAVATING, BULK, DOZER									
0011	Open site									
2000	80 H.P., 50' haul, sand & gravel	B-10L	460	.026	B.C.Y.		1.17	1.05	2.22	2.93
2010	Sandy clay & loam		440	.027			1.22	1.09	2.31	3.06
2020	Common earth		400	.030			1.34	1.20	2.54	3.37
2040	Clay		250	.048			2.15	1.92	4.07	5.40
2200	150' haul, sand & gravel		230	.052			2.34	2.09	4.43	5.85
2210	Sandy clay & loam		220	.055			2.44	2.19	4.63	6.15
2220	Common earth		200	.060			2.69	2.40	5.09	6.75
2240	Clay		125	.096			4.30	3.85	8.15	10.80
2400	300' haul, sand & gravel		120	.100			4.48	4.01	8.49	11.25
2410	Sandy clay & loam		115	.104			4.68	4.18	8.86	11.75
2420	Common earth		100	.120			5.40	4.81	10.21	13.50
2440	Clay	▼	65	.185			8.25	7.40	15.65	21
3000	105 H.P., 50' haul, sand & gravel	B-10W	700	.017			.77	.85	1.62	2.10
3010	Sandy clay & loam		680	.018			.79	.87	1.66	2.17
3020	Common earth		610	.020			.88	.97	1.85	2.41
3040	Clay		385	.031			1.40	1.54	2.94	3.82
3200	150' haul, sand & gravel		310	.039			1.74	1.91	3.65	4.74
3210	Sandy clay & loam		300	.040			1.79	1.97	3.76	4.90
3220	Common earth		270	.044			1.99	2.19	4.18	5.45
3240	Clay		170	.071			3.16	3.48	6.64	8.65
3300	300' haul, sand & gravel		140	.086			3.84	4.23	8.07	10.50
3310	Sandy clay & loam		135	.089			3.98	4.38	8.36	10.85
3320	Common earth		120	.100			4.48	4.93	9.41	12.30
3340	Clay		100	.120			5.40	5.90	11.30	14.70
4000	200 H.P., 50' haul, sand & gravel	B-10B	1400	.009			.38	.95	1.33	1.63
4010	Sandy clay & loam		1360	.009			.40	.97	1.37	1.67
4020	Common earth		1230	.010			.44	1.08	1.52	1.86
4040	Clay		770	.016			.70	1.72	2.42	2.95
4200	150' haul, sand & gravel		595	.020			.90	2.23	3.13	3.83
4210	Sandy clay & loam		580	.021			.93	2.28	3.21	3.92
4220	Common earth		516	.023			1.04	2.57	3.61	4.42
4240	Clay		325	.037			1.65	4.08	5.73	7
4400	300' haul, sand & gravel		310	.039			1.74	4.27	6.01	7.35
4410	Sandy clay & loam		300	.040			1.79	4.42	6.21	7.60
4420	Common earth	▼	270	.044	▼		1.99	4.91	6.90	8.45

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.46 Excavating, Bulk, Dozer		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Casts		Total	Total Incl O&P
							Labar	Equipment		
4440	Clay	B-10B	170	.071	B.C.Y.		3.16	7.80	10.96	13.35
5000	300 H.P., 50' haul, sand & gravel	B-10M	1900	.006			.28	.96	1.24	1.48
5010	Sandy clay & laam		1850	.006			.29	.98	1.27	1.52
5020	Camman earth		1650	.007			.33	1.10	1.43	1.71
5040	Clay		1025	.012			.52	1.77	2.29	2.75
5200	150' haul, sand & gravel		920	.013			.58	1.97	2.55	3.06
5210	Sandy clay & laam		895	.013			.60	2.03	2.63	3.15
5220	Camman earth		800	.015			.67	2.27	2.94	3.52
5240	Clay		500	.024			1.08	3.63	4.71	5.65
5400	300' haul, sand & gravel		470	.026			1.14	3.87	5.01	6
5410	Sandy clay & laam		455	.026			1.18	3.99	5.17	6.20
5420	Camman earth		410	.029			1.31	4.43	5.74	6.90
5440	Clay		250	.048			2.15	7.25	9.40	11.30
5500	460 H.P., 50' haul, sand & gravel	B-10X	1930	.006			.28	1.25	1.53	1.79
5506	Sandy clay & laam		1880	.006			.29	1.28	1.57	1.85
5510	Camman earth		1680	.007			.32	1.43	1.75	2.07
5520	Clay		1050	.011			.51	2.29	2.80	3.30
5530	150' haul, sand & gravel		1290	.009			.42	1.87	2.29	2.69
5535	Sandy clay & laam		1250	.010			.43	1.93	2.36	2.78
5540	Camman earth		1120	.011			.48	2.15	2.63	3.10
5550	Clay		700	.017			.77	3.44	4.21	4.96
5560	300' haul, sand & gravel		660	.018			.81	3.65	4.46	5.25
5565	Sandy clay & laam		640	.019			.84	3.76	4.60	5.40
5570	Camman earth		575	.021			.94	4.19	5.13	6.05
5580	Clay		350	.034			1.54	6.90	8.44	9.90
6000	700 H.P., 50' haul, sand & gravel	B-10V	3500	.003			.15	1.28	1.43	1.64
6006	Sandy clay & laam		3400	.004			.16	1.32	1.48	1.69
6010	Camman earth		3035	.004			.18	1.48	1.66	1.89
6020	Clay		1925	.006			.28	2.33	2.61	2.99
6030	150' haul, sand & gravel		2025	.006			.27	2.22	2.49	2.84
6035	Sandy clay & laam		1960	.006			.27	2.29	2.56	2.94
6040	Camman earth		1750	.007			.31	2.56	2.87	3.29
6050	Clay		1100	.011			.49	4.08	4.57	5.25
6060	300' haul, sand & gravel		1030	.012			.52	4.35	4.87	5.60
6065	Sandy clay & laam		1005	.012			.54	4.46	5	5.75
6070	Camman earth		900	.013			.60	4.98	5.58	6.40
6080	Clay		550	.022			.98	8.15	9.13	10.45

31 23 16.50 Excavation, Bulk, Scrapers

0010	EXCAVATION, BULK, SCRAPERS	R312316-40								
0100	Elev. scraper 11 C.Y., sand & gravel 1500' haul, 1/4 dozer	B-33F	690	.020	B.C.Y.		.92	2.37	3.29	4.01
0150	3000' haul		610	.023			1.04	2.68	3.72	4.54
0200	5000' haul		505	.028			1.26	3.24	4.50	5.50
0300	Camman earth, 1500' haul		600	.023			1.06	2.72	3.78	4.61
0350	3000' haul		530	.026			1.20	3.08	4.28	5.20
0400	5000' haul		440	.032			1.44	3.71	5.15	6.30
0410	Sandy clay & laam, 1500' haul		648	.022			.98	2.52	3.50	4.26
0420	3000' haul		572	.024			1.11	2.86	3.97	4.83
0430	5000' haul		475	.029			1.34	3.44	4.78	5.80
0500	Clay, 1500' haul		375	.037			1.69	4.36	6.05	7.35
0550	3000' haul		330	.042			1.93	4.95	6.88	8.40
0600	5000' haul		275	.051			2.31	5.95	8.26	10.05
1000	Self propelled scraper, 14 C.Y. 1/4 push dozer, sand									

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.50 Excavation, Bulk, Scrapers

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1050	Sand and gravel, 1500' haul	B-33D	920	.015	B.C.Y.		.69	2.48	3.17	3.78
1100	3000' haul		805	.017			.79	2.84	3.63	4.32
1200	5000' haul		645	.022			.99	3.54	4.53	5.40
1300	Common earth, 1500' haul		800	.018			.79	2.85	3.64	4.35
1350	3000' haul		700	.020			.91	3.26	4.17	4.97
1400	5000' haul		560	.025			1.14	4.08	5.22	6.20
1420	Sandy clay & loam, 1500' haul		864	.016			.74	2.64	3.38	4.03
1430	3000' haul		786	.018			.81	2.90	3.71	4.43
1440	5000' haul		605	.023			1.05	3.77	4.82	5.75
1500	Clay, 1500' haul		500	.028			1.27	4.57	5.84	6.95
1550	3000' haul		440	.032			1.44	5.20	6.64	7.90
1600	5000' haul		350	.040			1.82	6.50	8.32	9.95
2000	21 C.Y., 1/4 push dozer, sand & gravel, 1500' haul	B-33E	1180	.012			.54	2.59	3.13	3.67
2100	3000' haul		910	.015			.70	3.35	4.05	4.75
2200	5000' haul		750	.019			.85	4.07	4.92	5.75
2300	Common earth, 1500' haul		1030	.014			.62	2.96	3.58	4.20
2350	3000' haul		790	.018			.80	3.86	4.66	5.45
2400	5000' haul		650	.022			.98	4.70	5.68	6.65
2420	Sandy clay & loam, 1500' haul		1112	.013			.57	2.75	3.32	3.89
2430	3000' haul		854	.016			.74	3.57	4.31	5.05
2440	5000' haul		702	.020			.91	4.35	5.26	6.15
2500	Clay, 1500' haul		645	.022			.99	4.73	5.72	6.70
2550	3000' haul		495	.028			1.28	6.15	7.43	8.75
2600	5000' haul		405	.035			1.57	7.55	9.12	10.70
2700	Towed, 10 C.Y., 1/4 push dozer, sand & gravel, 1500' haul	B-33B	560	.025			1.14	4.31	5.45	6.45
2720	3000' haul		450	.031			1.41	5.35	6.76	8.05
2730	5000' haul		365	.038			1.74	6.60	8.34	9.90
2750	Common earth, 1500' haul		420	.033			1.51	5.75	7.26	8.60
2770	3000' haul		400	.035			1.59	6.05	7.64	9.05
2780	5000' haul		310	.045			2.05	7.80	9.85	11.65
2785	Sandy clay & loam, 1500' haul		454	.031			1.40	5.30	6.70	8
2790	3000' haul		432	.032			1.47	5.60	7.07	8.40
2795	5000' haul		340	.041			1.87	7.10	8.97	10.65
2800	Clay, 1500' haul		315	.044			2.02	7.65	9.67	11.45
2820	3000' haul		300	.047			2.12	8.05	10.17	12.10
2840	5000' haul		225	.062			2.82	10.70	13.52	16.10
2900	15 C.Y., 1/4 push dozer, sand & gravel, 1500' haul	B-33C	800	.018			.79	3.04	3.83	4.55
2920	3000' haul		640	.022			.99	3.80	4.79	5.70
2940	5000' haul		520	.027			1.22	4.67	5.89	7
2960	Common earth, 1500' haul		600	.023			1.06	4.05	5.11	6.05
2980	3000' haul		560	.025			1.14	4.34	5.48	6.50
3000	5000' haul		440	.032			1.44	5.50	6.94	8.30
3005	Sandy clay & loam, 1500' haul		648	.022			.98	3.75	4.73	5.60
3010	3000' haul		605	.023			1.05	4.02	5.07	6
3015	5000' haul		475	.029			1.34	5.10	6.44	7.70
3020	Clay, 1500' haul		450	.031			1.41	5.40	6.81	8.10
3040	3000' haul		420	.033			1.51	5.80	7.31	8.65
3060	5000' haul		320	.044			1.99	7.60	9.59	11.35

31 23 Excavation and Fill

31 23 19 – Dewatering

31 23 19.20 Dewatering Systems		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	DEWATERING SYSTEMS									
0020	Excavate drainage trench, 2' wide, 2' deep	B-11C	90	.178	C.Y.		7.60	4.06	11.66	16.05
0100	2' wide, 3' deep, with backhoe loader	"	135	.119			5.05	2.71	7.76	10.75
0200	Excavate sump pits by hand, light soil	1 Clab	7.10	1.127			41.50		41.50	63.50
0300	Heavy soil	"	3.50	2.286	▼		84		84	129
0500	Pumping 8 hr., attended 2 hrs. per day, including 20 L.F. of suction hose & 100 L.F. discharge hose									
0600	2" diaphragm pump used for 8 hours	B-10H	4	3	Day		134	18.95	152.95	226
0650	4" diaphragm pump used for 8 hours	B-10I	4	3			134	31	165	239
0800	8 hrs. attended, 2" diaphragm pump	B-10H	1	12			540	75.50	615.50	905
0900	3" centrifugal pump	B-10J	1	12			540	84.50	624.50	915
1000	4" diaphragm pump	B-10I	1	12			540	124	664	955
1100	6" centrifugal pump	B-10K	1	12	▼		540	365	905	1,225
1300	CMP, incl. excavation 3' deep, 12" diameter	B-6	115	.209	L.F.	8.35	8.35	3.18	19.88	25.50
1400	18" diameter		100	.240	"	12.55	9.65	3.65	25.85	32.50
1600	Sump hole construction, incl. excavation and gravel, pit		1250	.019	C.F.	1.12	.77	.29	2.18	2.73
1700	With 12" gravel collar, 12" pipe, corrugated, 16 ga.		70	.343	L.F.	21.50	13.75	5.20	40.45	51
1800	15" pipe, corrugated, 16 ga.		55	.436		28	17.50	6.65	52.15	65
1900	18" pipe, corrugated, 16 ga.		50	.480		32.50	19.25	7.30	59.05	73.50
2000	24" pipe, corrugated, 14 ga.		40	.600		39	24	9.15	72.15	90
2200	Wood lining, up to 4' x 4', add	▼	300	.080	SFCA	16.25	3.21	1.22	20.68	24
9950	See Section 31 23 19.40 for wellpoints									
9960	See Section 31 23 19.30 for deep well systems									

31 23 19.30 Wells

0010	WELLS									
0011	For dewatering 10' to 20' deep, 2' diameter									
0020	with steel casing, minimum	B-6	165	.145	V.L.F.	38	5.85	2.21	46.06	53
0050	Average		98	.245		43	9.85	3.73	56.58	66.50
0100	Maximum	▼	49	.490	▼	48.50	19.65	7.45	75.60	91.50
0300	For dewatering pumps see 01 54 33 in Reference Section									
0500	For domestic water wells, see Section 33 21 13.10									

31 23 19.40 Wellpoints

0010	WELLPOINTS									
0011	For equipment rental, see 01 54 33 in Reference Section									
0100	Installation and removal of single stage system									
0110	Labor only, .75 labor-hours per L.F.	1 Clab	10.70	.748	LF Hdr		27.50		27.50	42.50
0200	2.0 labor-hours per L.F.	"	4	2	"		73.50		73.50	113
0400	Pump operation, 4 @ 6 hr. shifts									
0410	Per 24 hour day	4 Eqlt	1.27	25.197	Day		1,175		1,175	1,800
0500	Per 168 hour week, 160 hr. straight, 8 hr. double time		.18	177	Week		8,375		8,375	12,700
0550	Per 4.3 week month		.04	800	Month		37,600		37,600	57,000
0600	Complete installation, operation, equipment rental, fuel & removal of system with 2" wellpoints 5' O.C.									
0700	100' long header, 6" diameter, first month	4 Eqlt	3.23	9.907	LF Hdr	159	465		624	880
0800	Thereafter, per month		4.13	7.748		127	365		492	695
1000	200' long header, 8" diameter, first month		6	5.333		144	251		395	540
1100	Thereafter, per month		8.39	3.814		71.50	179		250.50	350
1300	500' long header, 8" diameter, first month		10.63	3.010		55.50	142		197.50	276
1400	Thereafter, per month		20.91	1.530		40	72		112	153
1600	1,000' long header, 10" diameter, first month		11.62	2.754		47.50	130		177.50	249
1700	Thereafter, per month		41.81	.765		24	36		60	80.50
1900	Note: above figures include pumping 168 hrs. per week									

31 23 Excavation and Fill

31 23 19 – Dewatering

31 23 19.40 Wellpoints

1910 and include the pump operator and one stand-by pump.

31 23 23 – Fill

31 23 23.13 Backfill

			Daily	Labor-			2014 Bare Costs		Total	Total
			Crew	Output	Hours	Unit	Labor	Equipment		Incl O&P
0010	BACKFILL	R312323-30								
0015	By hand, no compaction, light soil		1 Clob	14	.571	L.C.Y.	21		21	32.50
0100	Heavy soil			11	.727	"	26.50		26.50	41
0300	Compaction in 6" layers, hand tamp, odd to above			20.60	.388	E.C.Y.	14.25		14.25	22
0400	Roller compaction operator walking, odd		B-10A	100	.120		5.40	1.83	7.23	10.20
0500	Air tamp, odd		B-9D	190	.211		7.80	1.40	9.20	13.60
0600	Vibrotong plate, odd		A-1D	60	.133		4.89	.60	5.49	8.20
0800	Compaction in 12" layers, hand tamp, odd to above		1 Clob	34	.235		8.60		8.60	13.30
0900	Roller compaction operator walking, odd		B-10A	150	.080		3.59	1.22	4.81	6.80
1000	Air tamp, odd		B-9	285	.140		5.20	.82	6.02	8.90
1100	Vibrotong plate, odd		A-1E	90	.089		3.26	.51	3.77	5.60
1300	Dozer backfilling, bulk, up to 300' haul, no compaction		B-10B	1200	.010	L.C.Y.	.45	1.10	1.55	1.89
1400	Air tamped, odd		B-11B	80	.200	E.C.Y.	8.35	3.78	12.13	16.95
1600	Compacting backfill, 6" to 12" lifts, vibrotong roller		B-10C	800	.015		.67	2.17	2.84	3.41
1700	Sheepsfoot roller		B-10D	750	.016		.72	2.36	3.08	3.68
1900	Dozer backfilling, trench, up to 300' haul, no compaction		B-10B	900	.013	L.C.Y.	.60	1.47	2.07	2.53
2000	Air tamped, odd		B-11B	80	.200	E.C.Y.	8.35	3.78	12.13	16.95
2200	Compacting backfill, 6" to 12" lifts, vibrotong roller		B-10C	700	.017		.77	2.48	3.25	3.90
2300	Sheepsfoot roller		B-10D	650	.018		.83	2.72	3.55	4.25
2350	Spreading in 8" layers, small dozer		B-10B	1060	.011	L.C.Y.	.51	1.25	1.76	2.14

31 23 23.14 Backfill, Structural

0010	BACKFILL, STRUCTURAL									
0011	Dozer or F.E. loader									
0020	From existing stockpile, no compaction									
2000	80 H.P., 50' haul, sand & gravel		B-10L	1100	.011	L.C.Y.	.49	.44	.93	1.22
2010	Sandy clay & loam			1070	.011		.50	.45	.95	1.26
2020	Common earth			975	.012		.55	.49	1.04	1.38
2040	Clay			850	.014		.63	.57	1.20	1.58
2400	300' haul, sand & gravel			370	.032		1.45	1.30	2.75	3.64
2410	Sandy clay & loam			360	.033		1.49	1.34	2.83	3.75
2420	Common earth			330	.036		1.63	1.46	3.09	4.08
2440	Clay			290	.041		1.85	1.66	3.51	4.65
3000	105 H.P., 50' haul, sand & gravel		B-10W	1350	.009		.40	.44	.84	1.09
3010	Sandy clay & loam			1325	.009		.41	.45	.86	1.11
3020	Common earth			1225	.010		.44	.48	.92	1.20
3040	Clay			1100	.011		.49	.54	1.03	1.33
3300	300' haul, sand & gravel			465	.026		1.16	1.27	2.43	3.16
3310	Sandy clay & loam			455	.026		1.18	1.30	2.48	3.23
3320	Common earth			415	.029		1.30	1.43	2.73	3.54
3340	Clay			370	.032		1.45	1.60	3.05	3.97
4000	200 H.P., 50' haul, sand & gravel		B-10B	2500	.005		.22	.53	.75	.91
4010	Sandy clay & loam			2435	.005		.22	.54	.76	.94
4020	Common earth			2200	.005		.24	.60	.84	1.03
4040	Clay			1950	.006		.28	.68	.96	1.17
4400	300' haul, sand & gravel			805	.015		.67	1.65	2.32	2.83
4410	Sandy clay & loam			790	.015		.68	1.68	2.36	2.89
4420	Common earth			735	.016		.73	1.80	2.53	3.10
4440	Clay			660	.018		.81	2.01	2.82	3.45
5000	300 H.P., 50' haul, sand & gravel		B-10M	3170	.004		.17	.57	.74	.89

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.14 Backfill, Structural		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5010	Sandy clay & loam	B-10M	3110	.004	L.C.Y.		.17	.58	.75	.90
5020	Common earth		2900	.004			.19	.63	.82	.97
5040	Clay		2700	.004			.20	.67	.87	1.04
5400	300' haul, sand & gravel		1500	.008			.36	1.21	1.57	1.88
5410	Sandy clay & loam		1470	.008			.37	1.24	1.61	1.92
5420	Common earth		1350	.009			.40	1.35	1.75	2.09
5440	Clay		1225	.010			.44	1.48	1.92	2.30
6010	For trench backfill, see Section 31 23 16.13 and 31 23 16.14									
6100	For compaction, see Section 31 23 23.24									

31 23 23.16 Fill By Borrow and Utility Bedding

0010	FILL BY BORROW AND UTILITY BEDDING									
0015	Fill by borrow, load, 1 mile haul, spread with dazer									
0020	for embankments	B-15	1200	.023	L.C.Y.	12.35	.95	2.26	15.56	17.50
0035	Select fill for shoulders & embankments	"	1200	.023	"	21	.95	2.26	24.21	27
0040	Fill, for hauling over 1 mile, add to above per C.Y., see Section 31 23 23.20				Mile				1.41	1.73
0049	Utility bedding, for pipe & conduit, not incl. compaction									
0050	Crushed or screened bank run gravel	B-6	150	.160	L.C.Y.	25	6.40	2.44	33.84	40
0100	Crushed stone 3/4" to 1/2"		150	.160		28.50	6.40	2.44	37.34	43.50
0200	Sand, dead or bank		150	.160		17.55	6.40	2.44	26.39	32
0500	Compacting bedding in trench	A-1D	90	.089	E.C.Y.		3.26	.40	3.66	5.50
0600	If material source exceeds 2 miles, add for extra mileage.									
0610	See Section 31 23 23.20 for hauling mileage add.									

31 23 23.17 General Fill

0010	GENERAL FILL									
0011	Spread dumped material, no compaction									
0020	By dazer, no compaction	B-10B	1000	.012	L.C.Y.		.54	1.33	1.87	2.28
0100	By hand	1 Clab	12	.667	"		24.50		24.50	37.50
0500	Gravel fill, compacted, under floor slabs, 4" deep	B-37	10000	.005	S.F.	.42	.19	.02	.63	.77
0600	6" deep		8600	.006		.63	.22	.02	.87	1.05
0700	9" deep		7200	.007		1.05	.26	.02	1.33	1.58
0800	12" deep		6000	.008		1.48	.31	.03	1.82	2.13
1000	Alternate pricing method, 4" deep		120	.400	E.C.Y.	31.50	15.50	1.32	48.32	60.50
1100	6" deep		160	.300		31.50	11.60	.99	44.09	54
1200	9" deep		200	.240		31.50	9.30	.79	41.59	50
1300	12" deep		220	.218		31.50	8.45	.72	40.67	49
1500	For fill under exterior paving, see Section 32 11 23.23									
1600	For flowable fill, see Section 03 31 05.35									

31 23 23.20 Hauling

0010	HAULING									
0011	Excavated or borrow, loose cubic yards									
0012	no loading equipment, including hauling, waiting, loading/dumping									
0013	time per cycle (wait, load, travel, unload or dump & return)									
0014	8 C.Y. truck, 15 MPH ave, cycle 0.5 miles, 10 min. wait/Ld./Uld.	B-34A	320	.025	L.C.Y.		.94	1.30	2.24	2.86
0016	cycle 1 mile		272	.029			1.10	1.53	2.63	3.38
0018	cycle 2 miles		208	.038			1.44	2.01	3.45	4.41
0020	cycle 4 miles		144	.056			2.09	2.90	4.99	6.35
0022	cycle 6 miles		112	.071			2.68	3.73	6.41	8.20
0024	cycle 8 miles		88	.091			3.41	4.74	8.15	10.40
0026	20 MPH ave, cycle 0.5 mile		336	.024			.89	1.24	2.13	2.73
0028	cycle 1 mile		296	.027			1.02	1.41	2.43	3.10
0030	cycle 2 miles		240	.033			1.25	1.74	2.99	3.82
0032	cycle 4 miles		176	.045			1.71	2.37	4.08	5.20

31 23 Excavation and Fill

31 23 23 – Fill

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
31 23 23.20 Hauling							Labor	Equipment		
0034	cycle 6 miles	B-34A	136	.059	L.C.Y.		2.21	3.07	5.28	6.75
0036	cycle 8 miles		112	.071			2.68	3.73	6.41	8.20
0044	25 MPH ave, cycle 4 miles		192	.042			1.56	2.17	3.73	4.78
0046	cycle 6 miles		160	.050			1.88	2.61	4.49	5.75
0048	cycle 8 miles		128	.063			2.35	3.26	5.61	7.15
0050	30 MPH ave, cycle 4 miles		216	.037			1.39	1.93	3.32	4.25
0052	cycle 6 miles		176	.045			1.71	2.37	4.08	5.20
0054	cycle 8 miles		144	.056			2.09	2.90	4.99	6.35
0114	15 MPH ave, cycle 0.5 mile, 15 min. wait/Ld./Uld.		224	.036			1.34	1.86	3.20	4.10
0116	cycle 1 mile		200	.040			1.50	2.09	3.59	4.58
0118	cycle 2 miles		168	.048			1.79	2.48	4.27	5.45
0120	cycle 4 miles		120	.067			2.50	3.48	5.98	7.65
0122	cycle 6 miles		96	.083			3.13	4.35	7.48	9.55
0124	cycle 8 miles		80	.100			3.76	5.20	8.96	11.50
0126	20 MPH ave, cycle 0.5 mile		232	.034			1.29	1.80	3.09	3.96
0128	cycle 1 mile		208	.038			1.44	2.01	3.45	4.41
0130	cycle 2 miles		184	.043			1.63	2.27	3.90	4.98
0132	cycle 4 miles		144	.056			2.09	2.90	4.99	6.35
0134	cycle 6 miles		112	.071			2.68	3.73	6.41	8.20
0136	cycle 8 miles		96	.083			3.13	4.35	7.48	9.55
0144	25 MPH ave, cycle 4 miles		152	.053			1.98	2.74	4.72	6.05
0146	cycle 6 miles		128	.063			2.35	3.26	5.61	7.15
0148	cycle 8 miles		112	.071			2.68	3.73	6.41	8.20
0150	30 MPH ave, cycle 4 miles		168	.048			1.79	2.48	4.27	5.45
0152	cycle 6 miles		144	.056			2.09	2.90	4.99	6.35
0154	cycle 8 miles		120	.067			2.50	3.48	5.98	7.65
0214	15 MPH ave, cycle 0.5 mile, 20 min wait/Ld./Uld.		176	.045			1.71	2.37	4.08	5.20
0216	cycle 1 mile		160	.050			1.88	2.61	4.49	5.75
0218	cycle 2 miles		136	.059			2.21	3.07	5.28	6.75
0220	cycle 4 miles		104	.077			2.89	4.01	6.90	8.80
0222	cycle 6 miles		88	.091			3.41	4.74	8.15	10.40
0224	cycle 8 miles		72	.111			4.17	5.80	9.97	12.70
0226	20 MPH ave, cycle 0.5 mile		176	.045			1.71	2.37	4.08	5.20
0228	cycle 1 mile		168	.048			1.79	2.48	4.27	5.45
0230	cycle 2 miles		144	.056			2.09	2.90	4.99	6.35
0232	cycle 4 miles		120	.067			2.50	3.48	5.98	7.65
0234	cycle 6 miles		96	.083			3.13	4.35	7.48	9.55
0236	cycle 8 miles		88	.091			3.41	4.74	8.15	10.40
0244	25 MPH ave, cycle 4 miles		128	.063			2.35	3.26	5.61	7.15
0246	cycle 6 miles		112	.071			2.68	3.73	6.41	8.20
0248	cycle 8 miles		96	.083			3.13	4.35	7.48	9.55
0250	30 MPH ave, cycle 4 miles		136	.059			2.21	3.07	5.28	6.75
0252	cycle 6 miles		120	.067			2.50	3.48	5.98	7.65
0254	cycle 8 miles		104	.077			2.89	4.01	6.90	8.80
0314	15 MPH ave, cycle 0.5 mile, 25 min wait/Ld./Uld.		144	.056			2.09	2.90	4.99	6.35
0316	cycle 1 mile		128	.063			2.35	3.26	5.61	7.15
0318	cycle 2 miles		112	.071			2.68	3.73	6.41	8.20
0320	cycle 4 miles		96	.083			3.13	4.35	7.48	9.55
0322	cycle 6 miles		80	.100			3.76	5.20	8.96	11.50
0324	cycle 8 miles		64	.125			4.69	6.50	11.19	14.30
0326	20 MPH ave, cycle 0.5 mile		144	.056			2.09	2.90	4.99	6.35
0328	cycle 1 mile		136	.059			2.21	3.07	5.28	6.75
0330	cycle 2 miles		120	.067			2.50	3.48	5.98	7.65

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0332	cycle 4 miles	B-34A	104	.077	L.C.Y.		2.89	4.01	6.90	8.80
0334	cycle 6 miles		88	.091			3.41	4.74	8.15	10.40
0336	cycle 8 miles		80	.100			3.76	5.20	8.96	11.50
0344	25 MPH ave, cycle 4 miles		112	.071			2.68	3.73	6.41	8.20
0346	cycle 6 miles		96	.083			3.13	4.35	7.48	9.55
0348	cycle 8 miles		88	.091			3.41	4.74	8.15	10.40
0350	30 MPH ave, cycle 4 miles		112	.071			2.68	3.73	6.41	8.20
0352	cycle 6 miles		104	.077			2.89	4.01	6.90	8.80
0354	cycle 8 miles		96	.083			3.13	4.35	7.48	9.55
0414	15 MPH ave, cycle 0.5 mile, 30 min wait/Ld./Uld.		120	.067			2.50	3.48	5.98	7.65
0416	cycle 1 mile		112	.071			2.68	3.73	6.41	8.20
0418	cycle 2 miles		96	.083			3.13	4.35	7.48	9.55
0420	cycle 4 miles		80	.100			3.76	5.20	8.96	11.50
0422	cycle 6 miles		72	.111			4.17	5.80	9.97	12.70
0424	cycle 8 miles		64	.125			4.69	6.50	11.19	14.30
0426	20 MPH ave, cycle 0.5 mile		120	.067			2.50	3.48	5.98	7.65
0428	cycle 1 mile		112	.071			2.68	3.73	6.41	8.20
0430	cycle 2 miles		104	.077			2.89	4.01	6.90	8.80
0432	cycle 4 miles		88	.091			3.41	4.74	8.15	10.40
0434	cycle 6 miles		80	.100			3.76	5.20	8.96	11.50
0436	cycle 8 miles		72	.111			4.17	5.80	9.97	12.70
0444	25 MPH ave, cycle 4 miles		96	.083			3.13	4.35	7.48	9.55
0446	cycle 6 miles		88	.091			3.41	4.74	8.15	10.40
0448	cycle 8 miles		80	.100			3.76	5.20	8.96	11.50
0450	30 MPH ave, cycle 4 miles		96	.083			3.13	4.35	7.48	9.55
0452	cycle 6 miles		88	.091			3.41	4.74	8.15	10.40
0454	cycle 8 miles		80	.100			3.76	5.20	8.96	11.50
0514	15 MPH ave, cycle 0.5 mile, 35 min wait/Ld./Uld.		104	.077			2.89	4.01	6.90	8.80
0516	cycle 1 mile		96	.083			3.13	4.35	7.48	9.55
0518	cycle 2 miles		88	.091			3.41	4.74	8.15	10.40
0520	cycle 4 miles		72	.111			4.17	5.80	9.97	12.70
0522	cycle 6 miles		64	.125			4.69	6.50	11.19	14.30
0524	cycle 8 miles		56	.143			5.35	7.45	12.80	16.40
0526	20 MPH ave, cycle 0.5 mile		104	.077			2.89	4.01	6.90	8.80
0528	cycle 1 mile		96	.083			3.13	4.35	7.48	9.55
0530	cycle 2 miles		96	.083			3.13	4.35	7.48	9.55
0532	cycle 4 miles		80	.100			3.76	5.20	8.96	11.50
0534	cycle 6 miles		72	.111			4.17	5.80	9.97	12.70
0536	cycle 8 miles		64	.125			4.69	6.50	11.19	14.30
0544	25 MPH ave, cycle 4 miles		88	.091			3.41	4.74	8.15	10.40
0546	cycle 6 miles		80	.100			3.76	5.20	8.96	11.50
0548	cycle 8 miles		72	.111			4.17	5.80	9.97	12.70
0550	30 MPH ave, cycle 4 miles		88	.091			3.41	4.74	8.15	10.40
0552	cycle 6 miles		80	.100			3.76	5.20	8.96	11.50
0554	cycle 8 miles		72	.111			4.17	5.80	9.97	12.70
1014	12 C.Y. truck, cycle 0.5 mile, 15 MPH ave, 15 min. wait/Ld./Uld.	B-34B	336	.024			.89	2.06	2.95	3.63
1016	cycle 1 mile		300	.027			1	2.31	3.31	4.07
1018	cycle 2 miles		252	.032			1.19	2.75	3.94	4.84
1020	cycle 4 miles		180	.044			1.67	3.85	5.52	6.80
1022	cycle 6 miles		144	.056			2.09	4.81	6.90	8.50
1024	cycle 8 miles		120	.067			2.50	5.75	8.25	10.15
1025	cycle 10 miles		96	.083			3.13	7.20	10.33	12.70
1026	20 MPH ave, cycle 0.5 mile		348	.023			.86	1.99	2.85	3.51

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1028	cycle 1 mile	B-34B	312	.026	L.C.Y.		.96	2.22	3.18	3.91
1030	cycle 2 miles		276	.029			1.09	2.51	3.60	4.42
1032	cycle 4 miles		216	.037			1.39	3.21	4.60	5.65
1034	cycle 6 miles		168	.048			1.79	4.12	5.91	7.25
1036	cycle 8 miles		144	.056			2.09	4.81	6.90	8.50
1038	cycle 10 miles		120	.067			2.50	5.75	8.25	10.15
1040	25 MPH ave, cycle 4 miles		228	.035			1.32	3.04	4.36	5.35
1042	cycle 6 miles		192	.042			1.56	3.61	5.17	6.35
1044	cycle 8 miles		168	.048			1.79	4.12	5.91	7.25
1046	cycle 10 miles		144	.056			2.09	4.81	6.90	8.50
1050	30 MPH ave, cycle 4 miles		252	.032			1.19	2.75	3.94	4.84
1052	cycle 6 miles		216	.037			1.39	3.21	4.60	5.65
1054	cycle 8 miles		180	.044			1.67	3.85	5.52	6.80
1056	cycle 10 miles		156	.051			1.93	4.44	6.37	7.80
1060	35 MPH ave, cycle 4 miles		264	.030			1.14	2.62	3.76	4.62
1062	cycle 6 miles		228	.035			1.32	3.04	4.36	5.35
1064	cycle 8 miles		204	.039			1.47	3.39	4.86	6
1066	cycle 10 miles		180	.044			1.67	3.85	5.52	6.80
1068	cycle 20 miles		120	.067			2.50	5.75	8.25	10.15
1069	cycle 30 miles		84	.095			3.58	8.25	11.83	14.50
1070	cycle 40 miles		72	.111			4.17	9.60	13.77	16.95
1072	40 MPH ave, cycle 6 miles		240	.033			1.25	2.88	4.13	5.10
1074	cycle 8 miles		216	.037			1.39	3.21	4.60	5.65
1076	cycle 10 miles		192	.042			1.56	3.61	5.17	6.35
1078	cycle 20 miles		120	.067			2.50	5.75	8.25	10.15
1080	cycle 30 miles		96	.083			3.13	7.20	10.33	12.70
1082	cycle 40 miles		72	.111			4.17	9.60	13.77	16.95
1084	cycle 50 miles		60	.133			5	11.55	16.55	20.50
1094	45 MPH ave, cycle 8 miles		216	.037			1.39	3.21	4.60	5.65
1096	cycle 10 miles		204	.039			1.47	3.39	4.86	6
1098	cycle 20 miles		132	.061			2.28	5.25	7.53	9.20
1100	cycle 30 miles		108	.074			2.78	6.40	9.18	11.30
1102	cycle 40 miles		84	.095			3.58	8.25	11.83	14.50
1104	cycle 50 miles		72	.111			4.17	9.60	13.77	16.95
1106	50 MPH ave, cycle 10 miles		216	.037			1.39	3.21	4.60	5.65
1108	cycle 20 miles		144	.056			2.09	4.81	6.90	8.50
1110	cycle 30 miles		108	.074			2.78	6.40	9.18	11.30
1112	cycle 40 miles		84	.095			3.58	8.25	11.83	14.50
1114	cycle 50 miles		72	.111			4.17	9.60	13.77	16.95
1214	15 MPH ave, cycle 0.5 mile, 20 min. wait/Ld./Uld.		264	.030			1.14	2.62	3.76	4.62
1216	cycle 1 mile		240	.033			1.25	2.88	4.13	5.10
1218	cycle 2 miles		204	.039			1.47	3.39	4.86	6
1220	cycle 4 miles		156	.051			1.93	4.44	6.37	7.80
1222	cycle 6 miles		132	.061			2.28	5.25	7.53	9.20
1224	cycle 8 miles		108	.074			2.78	6.40	9.18	11.30
1225	cycle 10 miles		96	.083			3.13	7.20	10.33	12.70
1226	20 MPH ave, cycle 0.5 mile		264	.030			1.14	2.62	3.76	4.62
1228	cycle 1 mile		252	.032			1.19	2.75	3.94	4.84
1230	cycle 2 miles		216	.037			1.39	3.21	4.60	5.65
1232	cycle 4 miles		180	.044			1.67	3.85	5.52	6.80
1234	cycle 6 miles		144	.056			2.09	4.81	6.90	8.50
1236	cycle 8 miles		132	.061			2.28	5.25	7.53	9.20
1238	cycle 10 miles		108	.074			2.78	6.40	9.18	11.30

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1240	25 MPH ave, cycle 4 miles	B-34B	192	.042	L.C.Y.		1.56	3.61	5.17	6.35
1242	cycle 6 miles		168	.048			1.79	4.12	5.91	7.25
1244	cycle 8 miles		144	.056			2.09	4.81	6.90	8.50
1246	cycle 10 miles		132	.061			2.28	5.25	7.53	9.20
1250	30 MPH ave, cycle 4 miles		204	.039			1.47	3.39	4.86	6
1252	cycle 6 miles		180	.044			1.67	3.85	5.52	6.80
1254	cycle 8 miles		156	.051			1.93	4.44	6.37	7.80
1256	cycle 10 miles		144	.056			2.09	4.81	6.90	8.50
1260	35 MPH ave, cycle 4 miles		216	.037			1.39	3.21	4.60	5.65
1262	cycle 6 miles		192	.042			1.56	3.61	5.17	6.35
1264	cycle 8 miles		168	.048			1.79	4.12	5.91	7.25
1266	cycle 10 miles		156	.051			1.93	4.44	6.37	7.80
1268	cycle 20 miles		108	.074			2.78	6.40	9.18	11.30
1269	cycle 30 miles		72	.111			4.17	9.60	13.77	16.95
1270	cycle 40 miles		60	.133			5	11.55	16.55	20.50
1272	40 MPH ave, cycle 6 miles		192	.042			1.56	3.61	5.17	6.35
1274	cycle 8 miles		180	.044			1.67	3.85	5.52	6.80
1276	cycle 10 miles		156	.051			1.93	4.44	6.37	7.80
1278	cycle 20 miles		108	.074			2.78	6.40	9.18	11.30
1280	cycle 30 miles		84	.095			3.58	8.25	11.83	14.50
1282	cycle 40 miles		72	.111			4.17	9.60	13.77	16.95
1284	cycle 50 miles		60	.133			5	11.55	16.55	20.50
1294	45 MPH ave, cycle 8 miles		180	.044			1.67	3.85	5.52	6.80
1296	cycle 10 miles		168	.048			1.79	4.12	5.91	7.25
1298	cycle 20 miles		120	.067			2.50	5.75	8.25	10.15
1300	cycle 30 miles		96	.083			3.13	7.20	10.33	12.70
1302	cycle 40 miles		72	.111			4.17	9.60	13.77	16.95
1304	cycle 50 miles		60	.133			5	11.55	16.55	20.50
1306	50 MPH ave, cycle 10 miles		180	.044			1.67	3.85	5.52	6.80
1308	cycle 20 miles		132	.061			2.28	5.25	7.53	9.20
1310	cycle 30 miles		96	.083			3.13	7.20	10.33	12.70
1312	cycle 40 miles		84	.095			3.58	8.25	11.83	14.50
1314	cycle 50 miles		72	.111			4.17	9.60	13.77	16.95
1414	15 MPH ave, cycle 0.5 mile, 25 min. wait/Ld./Uld.		204	.039			1.47	3.39	4.86	6
1416	cycle 1 mile		192	.042			1.56	3.61	5.17	6.35
1418	cycle 2 miles		168	.048			1.79	4.12	5.91	7.25
1420	cycle 4 miles		132	.061			2.28	5.25	7.53	9.20
1422	cycle 6 miles		120	.067			2.50	5.75	8.25	10.15
1424	cycle 8 miles		96	.083			3.13	7.20	10.33	12.70
1425	cycle 10 miles		84	.095			3.58	8.25	11.83	14.50
1426	20 MPH ave, cycle 0.5 mile		216	.037			1.39	3.21	4.60	5.65
1428	cycle 1 mile		204	.039			1.47	3.39	4.86	6
1430	cycle 2 miles		180	.044			1.67	3.85	5.52	6.80
1432	cycle 4 miles		156	.051			1.93	4.44	6.37	7.80
1434	cycle 6 miles		132	.061			2.28	5.25	7.53	9.20
1436	cycle 8 miles		120	.067			2.50	5.75	8.25	10.15
1438	cycle 10 miles		96	.083			3.13	7.20	10.33	12.70
1440	25 MPH ave, cycle 4 miles		168	.048			1.79	4.12	5.91	7.25
1442	cycle 6 miles		144	.056			2.09	4.81	6.90	8.50
1444	cycle 8 miles		132	.061			2.28	5.25	7.53	9.20
1446	cycle 10 miles		108	.074			2.78	6.40	9.18	11.30
1450	30 MPH ave, cycle 4 miles		168	.048			1.79	4.12	5.91	7.25
1452	cycle 6 miles		156	.051			1.93	4.44	6.37	7.80

31 23 Excavation and Fill

31 23 23 - Fill

31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1454	cycle 8 miles	B-34B	132	.061	L.C.Y.		2.28	5.25	7.53	9.20
1456	cycle 10 miles		120	.067			2.50	5.75	8.25	10.15
1460	35 MPH ave, cycle 4 miles		180	.044			1.67	3.85	5.52	6.80
1462	cycle 6 miles		156	.051			1.93	4.44	6.37	7.80
1464	cycle 8 miles		144	.056			2.09	4.81	6.90	8.50
1466	cycle 10 miles		132	.061			2.28	5.25	7.53	9.20
1468	cycle 20 miles		96	.083			3.13	7.20	10.33	12.70
1469	cycle 30 miles		72	.111			4.17	9.60	13.77	16.95
1470	cycle 40 miles		60	.133			5	11.55	16.55	20.50
1472	40 MPH ave, cycle 6 miles		168	.048			1.79	4.12	5.91	7.25
1474	cycle 8 miles		156	.051			1.93	4.44	6.37	7.80
1476	cycle 10 miles		144	.056			2.09	4.81	6.90	8.50
1478	cycle 20 miles		96	.083			3.13	7.20	10.33	12.70
1480	cycle 30 miles		84	.095			3.58	8.25	11.83	14.50
1482	cycle 40 miles		60	.133			5	11.55	16.55	20.50
1484	cycle 50 miles		60	.133			5	11.55	16.55	20.50
1494	45 MPH ave, cycle 8 miles		156	.051			1.93	4.44	6.37	7.80
1496	cycle 10 miles		144	.056			2.09	4.81	6.90	8.50
1498	cycle 20 miles		108	.074			2.78	6.40	9.18	11.30
1500	cycle 30 miles		84	.095			3.58	8.25	11.83	14.50
1502	cycle 40 miles		72	.111			4.17	9.60	13.77	16.95
1504	cycle 50 miles		60	.133			5	11.55	16.55	20.50
1506	50 MPH ave, cycle 10 miles		156	.051			1.93	4.44	6.37	7.80
1508	cycle 20 miles		120	.067			2.50	5.75	8.25	10.15
1510	cycle 30 miles		96	.083			3.13	7.20	10.33	12.70
1512	cycle 40 miles		72	.111			4.17	9.60	13.77	16.95
1514	cycle 50 miles		60	.133			5	11.55	16.55	20.50
1614	15 MPH, cycle 0.5 mile, 30 min. wait/Ld./Uld.		180	.044			1.67	3.85	5.52	6.80
1616	cycle 1 mile		168	.048			1.79	4.12	5.91	7.25
1618	cycle 2 miles		144	.056			2.09	4.81	6.90	8.50
1620	cycle 4 miles		120	.067			2.50	5.75	8.25	10.15
1622	cycle 6 miles		108	.074			2.78	6.40	9.18	11.30
1624	cycle 8 miles		84	.095			3.58	8.25	11.83	14.50
1625	cycle 10 miles		84	.095			3.58	8.25	11.83	14.50
1626	20 MPH ave, cycle 0.5 mile		180	.044			1.67	3.85	5.52	6.80
1628	cycle 1 mile		168	.048			1.79	4.12	5.91	7.25
1630	cycle 2 miles		156	.051			1.93	4.44	6.37	7.80
1632	cycle 4 miles		132	.061			2.28	5.25	7.53	9.20
1634	cycle 6 miles		120	.067			2.50	5.75	8.25	10.15
1636	cycle 8 miles		108	.074			2.78	6.40	9.18	11.30
1638	cycle 10 miles		96	.083			3.13	7.20	10.33	12.70
1640	25 MPH ave, cycle 4 miles		144	.056			2.09	4.81	6.90	8.50
1642	cycle 6 miles		132	.061			2.28	5.25	7.53	9.20
1644	cycle 8 miles		108	.074			2.78	6.40	9.18	11.30
1646	cycle 10 miles		108	.074			2.78	6.40	9.18	11.30
1650	30 MPH ave, cycle 4 miles		144	.056			2.09	4.81	6.90	8.50
1652	cycle 6 miles		132	.061			2.28	5.25	7.53	9.20
1654	cycle 8 miles		120	.067			2.50	5.75	8.25	10.15
1656	cycle 10 miles		108	.074			2.78	6.40	9.18	11.30
1660	35 MPH ave, cycle 4 miles		156	.051			1.93	4.44	6.37	7.80
1662	cycle 6 miles		144	.056			2.09	4.81	6.90	8.50
1664	cycle 8 miles		132	.061			2.28	5.25	7.53	9.20
1666	cycle 10 miles		120	.067			2.50	5.75	8.25	10.15

31 23 Excavation and Fill

31 23 23 - Fill

31 23 23.20 Hauling		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Casts			Total Incl O&P
							Labar	Equipment	Total	
1668	cycle 20 miles	B-34B	84	.095	L.C.Y.		3.58	8.25	11.83	14.50
1669	cycle 30 miles		72	.111			4.17	9.60	13.77	16.95
1670	cycle 40 miles		60	.133			5	11.55	16.55	20.50
1672	40 MPH, cycle 6 miles		144	.056			2.09	4.81	6.90	8.50
1674	cycle 8 miles		132	.061			2.28	5.25	7.53	9.20
1676	cycle 10 miles		120	.067			2.50	5.75	8.25	10.15
1678	cycle 20 miles		96	.083			3.13	7.20	10.33	12.70
1680	cycle 30 miles		72	.111			4.17	9.60	13.77	16.95
1682	cycle 40 miles		60	.133			5	11.55	16.55	20.50
1684	cycle 50 miles		48	.167			6.25	14.40	20.65	25.50
1694	45 MPH ave, cycle 8 miles		144	.056			2.09	4.81	6.90	8.50
1696	cycle 10 miles		132	.061			2.28	5.25	7.53	9.20
1698	cycle 20 miles		96	.083			3.13	7.20	10.33	12.70
1700	cycle 30 miles		84	.095			3.58	8.25	11.83	14.50
1702	cycle 40 miles		60	.133			5	11.55	16.55	20.50
1704	cycle 50 miles		60	.133			5	11.55	16.55	20.50
1706	50 MPH ave, cycle 10 miles		132	.061			2.28	5.25	7.53	9.20
1708	cycle 20 miles		108	.074			2.78	6.40	9.18	11.30
1710	cycle 30 miles		84	.095			3.58	8.25	11.83	14.50
1712	cycle 40 miles		72	.111			4.17	9.60	13.77	16.95
1714	cycle 50 miles		60	.133			5	11.55	16.55	20.50
2000	Hauling, 8 C.Y. truck, small project cast per hour	B-34A	8	1	Hr.		37.50	52	89.50	115
2100	12 C.Y. Truck	B-34B	8	1			37.50	86.50	124	153
2150	16.5 C.Y. Truck	B-34C	8	1			37.50	92.50	130	160
2175	18 C.Y. 8 wheel Truck	B-34I	8	1			37.50	108	145.50	177
2200	20 C.Y. Truck	B-34D	8	1			37.50	94	131.50	162
2300	Grading at dump, or embankment if required, by dazer	B-10B	1000	.012	L.C.Y.		.54	1.33	1.87	2.28
2310	Spatter at fill or cut, if required	1 Clab	8	1	Hr.		36.50		36.50	56.50
9014	18 C.Y. truck, 8 wheels, 15 min. wait/Ld./Uld., 15 MPH, cycle 0.5 mi.	B-34I	504	.016	L.C.Y.		.60	1.72	2.32	2.80
9016	cycle 1 mile		450	.018			.67	1.93	2.60	3.14
9018	cycle 2 miles		378	.021			.79	2.29	3.08	3.73
9020	cycle 4 miles		270	.030			1.11	3.21	4.32	5.25
9022	cycle 6 miles		216	.037			1.39	4.02	5.41	6.55
9024	cycle 8 miles		180	.044			1.67	4.82	6.49	7.85
9025	cycle 10 miles		144	.056			2.09	6.05	8.14	9.85
9026	20 MPH ave, cycle 0.5 mile		522	.015			.58	1.66	2.24	2.71
9028	cycle 1 mile		468	.017			.64	1.85	2.49	3.02
9030	cycle 2 miles		414	.019			.73	2.10	2.83	3.41
9032	cycle 4 miles		324	.025			.93	2.68	3.61	4.36
9034	cycle 6 miles		252	.032			1.19	3.44	4.63	5.60
9036	cycle 8 miles		216	.037			1.39	4.02	5.41	6.55
9038	cycle 10 miles		180	.044			1.67	4.82	6.49	7.85
9040	25 MPH ave, cycle 4 miles		342	.023			.88	2.54	3.42	4.13
9042	cycle 6 miles		288	.028			1.04	3.01	4.05	4.90
9044	cycle 8 miles		252	.032			1.19	3.44	4.63	5.60
9046	cycle 10 miles		216	.037			1.39	4.02	5.41	6.55
9050	30 MPH ave, cycle 4 miles		378	.021			.79	2.29	3.08	3.73
9052	cycle 6 miles		324	.025			.93	2.68	3.61	4.36
9054	cycle 8 miles		270	.030			1.11	3.21	4.32	5.25
9056	cycle 10 miles		234	.034			1.28	3.71	4.99	6.05
9060	35 MPH ave, cycle 4 miles		396	.020			.76	2.19	2.95	3.57
9062	cycle 6 miles		342	.023			.88	2.54	3.42	4.13
9064	cycle 8 miles		288	.028			1.04	3.01	4.05	4.90

31 23 Excavation and Fill

31 23 23 - Fill

31 23 23.20 Hauling				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
9066		cycle 10 miles		B-341	270	.030	L.C.Y.		1.11	3.21	4.32	5.25
9068		cycle 20 miles			162	.049			1.85	5.35	7.20	8.75
9070		cycle 30 miles			126	.063			2.38	6.90	9.28	11.20
9072		cycle 40 miles			90	.089			3.34	9.65	12.99	15.70
9074		40 MPH ave, cycle 6 miles			360	.022			.83	2.41	3.24	3.92
9076		cycle 8 miles			324	.025			.93	2.68	3.61	4.36
9078		cycle 10 miles			288	.028			1.04	3.01	4.05	4.90
9080		cycle 20 miles			180	.044			1.67	4.82	6.49	7.85
9082		cycle 30 miles			144	.056			2.09	6.05	8.14	9.85
9084		cycle 40 miles			108	.074			2.78	8.05	10.83	13.10
9086		cycle 50 miles			90	.089			3.34	9.65	12.99	15.70
9094		45 MPH ave, cycle 8 miles			324	.025			.93	2.68	3.61	4.36
9096		cycle 10 miles			306	.026			.98	2.83	3.81	4.62
9098		cycle 20 miles			198	.040			1.52	4.38	5.90	7.15
9100		cycle 30 miles			144	.056			2.09	6.05	8.14	9.85
9102		cycle 40 miles			126	.063			2.38	6.90	9.28	11.20
9104		cycle 50 miles			108	.074			2.78	8.05	10.83	13.10
9106		50 MPH ave, cycle 10 miles			324	.025			.93	2.68	3.61	4.36
9108		cycle 20 miles			216	.037			1.39	4.02	5.41	6.55
9110		cycle 30 miles			162	.049			1.85	5.35	7.20	8.75
9112		cycle 40 miles			126	.063			2.38	6.90	9.28	11.20
9114		cycle 50 miles			108	.074			2.78	8.05	10.83	13.10
9214		20 min. wait/Ld./Uld., 15 MPH, cycle 0.5 mi.			396	.020			.76	2.19	2.95	3.57
9216		cycle 1 mile			360	.022			.83	2.41	3.24	3.92
9218		cycle 2 miles			306	.026			.98	2.83	3.81	4.62
9220		cycle 4 miles			234	.034			1.28	3.71	4.99	6.05
9222		cycle 6 miles			198	.040			1.52	4.38	5.90	7.15
9224		cycle 8 miles			162	.049			1.85	5.35	7.20	8.75
9225		cycle 10 miles			144	.056			2.09	6.05	8.14	9.85
9226		20 MPH ave, cycle 0.5 mile			396	.020			.76	2.19	2.95	3.57
9228		cycle 1 mile			378	.021			.79	2.29	3.08	3.73
9230		cycle 2 miles			324	.025			.93	2.68	3.61	4.36
9232		cycle 4 miles			270	.030			1.11	3.21	4.32	5.25
9234		cycle 6 miles			216	.037			1.39	4.02	5.41	6.55
9236		cycle 8 miles			198	.040			1.52	4.38	5.90	7.15
9238		cycle 10 miles			162	.049			1.85	5.35	7.20	8.75
9240		25 MPH ave, cycle 4 miles			288	.028			1.04	3.01	4.05	4.90
9242		cycle 6 miles			252	.032			1.19	3.44	4.63	5.60
9244		cycle 8 miles			216	.037			1.39	4.02	5.41	6.55
9246		cycle 10 miles			198	.040			1.52	4.38	5.90	7.15
9250		30 MPH ave, cycle 4 miles			306	.026			.98	2.83	3.81	4.62
9252		cycle 6 miles			270	.030			1.11	3.21	4.32	5.25
9254		cycle 8 miles			234	.034			1.28	3.71	4.99	6.05
9256		cycle 10 miles			216	.037			1.39	4.02	5.41	6.55
9260		35 MPH ave, cycle 4 miles			324	.025			.93	2.68	3.61	4.36
9262		cycle 6 miles			288	.028			1.04	3.01	4.05	4.90
9264		cycle 8 miles			252	.032			1.19	3.44	4.63	5.60
9266		cycle 10 miles			234	.034			1.28	3.71	4.99	6.05
9268		cycle 20 miles			162	.049			1.85	5.35	7.20	8.75
9270		cycle 30 miles			108	.074			2.78	8.05	10.83	13.10
9272		cycle 40 miles			90	.089			3.34	9.65	12.99	15.70
9274		40 MPH ave, cycle 6 miles			288	.028			1.04	3.01	4.05	4.90
9276		cycle 8 miles			270	.030			1.11	3.21	4.32	5.25

31 23 Excavation and Fill

31 23 23 - Fill

31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
9278	cycle 10 miles	B-341	234	.034	L.C.Y.		1.28	3.71	4.99	6.05
9280	cycle 20 miles		162	.049			1.85	5.35	7.20	8.75
9282	cycle 30 miles		126	.063			2.38	6.90	9.28	11.20
9284	cycle 40 miles		108	.074			2.78	8.05	10.83	13.10
9286	cycle 50 miles		90	.089			3.34	9.65	12.99	15.70
9294	45 MPH ave, cycle 8 miles		270	.030			1.11	3.21	4.32	5.25
9296	cycle 10 miles		252	.032			1.19	3.44	4.63	5.60
9298	cycle 20 miles		180	.044			1.67	4.82	6.49	7.85
9300	cycle 30 miles		144	.056			2.09	6.05	8.14	9.85
9302	cycle 40 miles		108	.074			2.78	8.05	10.83	13.10
9304	cycle 50 miles		90	.089			3.34	9.65	12.99	15.70
9306	50 MPH ave, cycle 10 miles		270	.030			1.11	3.21	4.32	5.25
9308	cycle 20 miles		198	.040			1.52	4.38	5.90	7.15
9310	cycle 30 miles		144	.056			2.09	6.05	8.14	9.85
9312	cycle 40 miles		126	.063			2.38	6.90	9.28	11.20
9314	cycle 50 miles		108	.074			2.78	8.05	10.83	13.10
9414	25 min. wait/Ld./Uld., 15 MPH, cycle 0.5 mi.		306	.026			.98	2.83	3.81	4.62
9416	cycle 1 mile		288	.028			1.04	3.01	4.05	4.90
9418	cycle 2 miles		252	.032			1.19	3.44	4.63	5.60
9420	cycle 4 miles		198	.040			1.52	4.38	5.90	7.15
9422	cycle 6 miles		180	.044			1.67	4.82	6.49	7.85
9424	cycle 8 miles		144	.056			2.09	6.05	8.14	9.85
9425	cycle 10 miles		126	.063			2.38	6.90	9.28	11.20
9426	20 MPH ave, cycle 0.5 mile		324	.025			.93	2.68	3.61	4.36
9428	cycle 1 mile		306	.026			.98	2.83	3.81	4.62
9430	cycle 2 miles		270	.030			1.11	3.21	4.32	5.25
9432	cycle 4 miles		234	.034			1.28	3.71	4.99	6.05
9434	cycle 6 miles		198	.040			1.52	4.38	5.90	7.15
9436	cycle 8 miles		180	.044			1.67	4.82	6.49	7.85
9438	cycle 10 miles		144	.056			2.09	6.05	8.14	9.85
9440	25 MPH ave, cycle 4 miles		252	.032			1.19	3.44	4.63	5.60
9442	cycle 6 miles		216	.037			1.39	4.02	5.41	6.55
9444	cycle 8 miles		198	.040			1.52	4.38	5.90	7.15
9446	cycle 10 miles		180	.044			1.67	4.82	6.49	7.85
9450	30 MPH ave, cycle 4 miles		252	.032			1.19	3.44	4.63	5.60
9452	cycle 6 miles		234	.034			1.28	3.71	4.99	6.05
9454	cycle 8 miles		198	.040			1.52	4.38	5.90	7.15
9456	cycle 10 miles		180	.044			1.67	4.82	6.49	7.85
9460	35 MPH ave, cycle 4 miles		270	.030			1.11	3.21	4.32	5.25
9462	cycle 6 miles		234	.034			1.28	3.71	4.99	6.05
9464	cycle 8 miles		216	.037			1.39	4.02	5.41	6.55
9466	cycle 10 miles		198	.040			1.52	4.38	5.90	7.15
9468	cycle 20 miles		144	.056			2.09	6.05	8.14	9.85
9470	cycle 30 miles		108	.074			2.78	8.05	10.83	13.10
9472	cycle 40 miles		90	.089			3.34	9.65	12.99	15.70
9474	40 MPH ave, cycle 6 miles		252	.032			1.19	3.44	4.63	5.60
9476	cycle 8 miles		234	.034			1.28	3.71	4.99	6.05
9478	cycle 10 miles		216	.037			1.39	4.02	5.41	6.55
9480	cycle 20 miles		144	.056			2.09	6.05	8.14	9.85
9482	cycle 30 miles		126	.063			2.38	6.90	9.28	11.20
9484	cycle 40 miles		90	.089			3.34	9.65	12.99	15.70
9486	cycle 50 miles		90	.089			3.34	9.65	12.99	15.70
9494	45 MPH ave, cycle 8 miles		234	.034			1.28	3.71	4.99	6.05

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
		B-34I			L.C.Y.		Labor	Equipment		
9496	cycle 10 miles		216	.037			1.39	4.02	5.41	6.55
9498	cycle 20 miles		162	.049			1.85	5.35	7.20	8.75
9500	cycle 30 miles		126	.063			2.38	6.90	9.28	11.20
9502	cycle 40 miles		108	.074			2.78	8.05	10.83	13.10
9504	cycle 50 miles		90	.089			3.34	9.65	12.99	15.70
9506	50 MPH ave, cycle 10 miles		234	.034			1.28	3.71	4.99	6.05
9508	cycle 20 miles		180	.044			1.67	4.82	6.49	7.85
9510	cycle 30 miles		144	.056			2.09	6.05	8.14	9.85
9512	cycle 40 miles		108	.074			2.78	8.05	10.83	13.10
9514	cycle 50 miles		90	.089			3.34	9.65	12.99	15.70
9614	30 min. wait/Ld./Uld., 15 MPH, cycle 0.5 mi.		270	.030			1.11	3.21	4.32	5.25
9616	cycle 1 mile		252	.032			1.19	3.44	4.63	5.60
9618	cycle 2 miles		216	.037			1.39	4.02	5.41	6.55
9620	cycle 4 miles		180	.044			1.67	4.82	6.49	7.85
9622	cycle 6 miles		162	.049			1.85	5.35	7.20	8.75
9624	cycle 8 miles		126	.063			2.38	6.90	9.28	11.20
9625	cycle 10 miles		126	.063			2.38	6.90	9.28	11.20
9626	20 MPH ave, cycle 0.5 mile		270	.030			1.11	3.21	4.32	5.25
9628	cycle 1 mile		252	.032			1.19	3.44	4.63	5.60
9630	cycle 2 miles		234	.034			1.28	3.71	4.99	6.05
9632	cycle 4 miles		198	.040			1.52	4.38	5.90	7.15
9634	cycle 6 miles		180	.044			1.67	4.82	6.49	7.85
9636	cycle 8 miles		162	.049			1.85	5.35	7.20	8.75
9638	cycle 10 miles		144	.056			2.09	6.05	8.14	9.85
9640	25 MPH ave, cycle 4 miles		216	.037			1.39	4.02	5.41	6.55
9642	cycle 6 miles		198	.040			1.52	4.38	5.90	7.15
9644	cycle 8 miles		180	.044			1.67	4.82	6.49	7.85
9646	cycle 10 miles		162	.049			1.85	5.35	7.20	8.75
9650	30 MPH ave, cycle 4 miles		216	.037			1.39	4.02	5.41	6.55
9652	cycle 6 miles		198	.040			1.52	4.38	5.90	7.15
9654	cycle 8 miles		180	.044			1.67	4.82	6.49	7.85
9656	cycle 10 miles		162	.049			1.85	5.35	7.20	8.75
9660	35 MPH ave, cycle 4 miles		234	.034			1.28	3.71	4.99	6.05
9662	cycle 6 miles		216	.037			1.39	4.02	5.41	6.55
9664	cycle 8 miles		198	.040			1.52	4.38	5.90	7.15
9666	cycle 10 miles		180	.044			1.67	4.82	6.49	7.85
9668	cycle 20 miles		126	.063			2.38	6.90	9.28	11.20
9670	cycle 30 miles		108	.074			2.78	8.05	10.83	13.10
9672	cycle 40 miles		90	.089			3.34	9.65	12.99	15.70
9674	40 MPH ave, cycle 6 miles		216	.037			1.39	4.02	5.41	6.55
9676	cycle 8 miles		198	.040			1.52	4.38	5.90	7.15
9678	cycle 10 miles		180	.044			1.67	4.82	6.49	7.85
9680	cycle 20 miles		144	.056			2.09	6.05	8.14	9.85
9682	cycle 30 miles		108	.074			2.78	8.05	10.83	13.10
9684	cycle 40 miles		90	.089			3.34	9.65	12.99	15.70
9686	cycle 50 miles		72	.111			4.17	12.05	16.22	19.60
9694	45 MPH ave, cycle 8 miles		216	.037			1.39	4.02	5.41	6.55
9696	cycle 10 miles		198	.040			1.52	4.38	5.90	7.15
9698	cycle 20 miles		144	.056			2.09	6.05	8.14	9.85
9700	cycle 30 miles		126	.063			2.38	6.90	9.28	11.20
9702	cycle 40 miles		108	.074			2.78	8.05	10.83	13.10
9704	cycle 50 miles		90	.089			3.34	9.65	12.99	15.70
9706	50 MPH ave, cycle 10 miles		198	.040			1.52	4.38	5.90	7.15

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
9708	cycle 20 miles	B-34I	162	.049	L.C.Y.		1.85	5.35	7.20	8.75
9710	cycle 30 miles		126	.063			2.38	6.90	9.28	11.20
9712	cycle 40 miles		108	.074			2.78	8.05	10.83	13.10
9714	cycle 50 miles	▼	90	.089	▼		3.34	9.65	12.99	15.70

31 23 23.24 Compaction, Structural

0010 COMPACTION, STRUCTURAL		R312323-30								
0020	Steel wheel tandem roller, 5 tons	B-10E	8	1.500	Hr.		67	19.90	86.90	124
0100	10 tons	B-10F	8	1.500	"		67	30.50	97.50	136
0300	Sheepsfoot or wobbly wheel roller, 8" lifts, common fill	B-10G	1300	.009	E.C.Y.		.41	.94	1.35	1.66
0400	Select fill	"	1500	.008			.36	.81	1.17	1.44
0600	Vibrotory plate, 8" lifts, common fill	A-1D	200	.040			1.47	.18	1.65	2.46
0700	Select fill	"	216	.037	▼		1.36	.17	1.53	2.27

31 25 Erosion and Sedimentation Controls

31 25 14 – Stabilization Measures for Erosion and Sedimentation Control

31 25 14.16 Rolled Erosion Control Mats and Blankets

0010	ROLLED EROSION CONTROL MATS AND BLANKETS										
0020	Jute mesh, 100 S.Y. per roll, 4' wide, stopled		B-80A	2400	.010	S.Y.	1.11	.37	.14	1.62	1.94
0070	Poper biodegradoble mesh		B-1	2500	.010		.10	.36		.46	.66
0080	Poper mulch		B-64	20000	.001		.10	.03	.02	.15	.17
0100	Plastic netting, stopled, 2" x 1" mesh, 20 mil		B-1	2500	.010		.23	.36		.59	.80
0200	Polypropylene mesh, stopled, 6.5 oz./S.Y.			2500	.010		2.33	.36		2.69	3.11
0300	Tobacco netting, or jute mesh #2, stopled		▼	2500	.010	▼	.18	.36		.54	.75
1000	Silt fence, polypropylene, 3' high, ideal conditions		2 Clob	1600	.010	L.F.	.24	.37		.61	.83
1100	Adverse conditions		"	950	.017	"	.24	.62		.86	1.21
1200	Place and remove hay boles		A-2	3	8	Ton	241	293	90	624	815
1250	Hay boles, stopled		"	2500	.010	L.F.	9.65	.35	.11	10.11	11.25

31 31 Soil Treatment

31 31 16 – Termite Control

31 31 16.13 Chemical Termite Control

0010	CHEMICAL TERMITE CONTROL										
0020	Slob ond wolls, residential	1 Skwk	1200	.007	SF Flr.	.37	.32			.69	.90
0100	Commercial, minimum		2496	.003		.32	.15			.47	.59
0200	Maximum		1645	.005		.48	.23			.71	.89
0400	Insecticides for termite control, minimum		14.20	.563	Gol.	63	26.50			89.50	111
0500	Maximum	▼	11	.727	"	108	34.50			142.50	173

31 32 Soil Stabilization

31 32 13 – Soil Mixing Stabilization

31 32 13.30 Calcium Chloride

0010	CALCIUM CHLORIDE									
0020	Calcium chloride delivered, 100 lb. bags, truckload lots	Ton	385				385		425	
0030	Solution, 4 lb. floke per gollon, tonk truck delivery	Gol.	1.44				1.44		1.58	

31 33 Rock Stabilization

31 33 13 – Rock Bolting and Grouting

31 33 13.10 Rock Bolting

0010	ROCK BOLTING	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
2020	Hollow core, prestressable anchor, 1" diameter, 5' long	2 Skwk	32	.500	Eq.	104	23.50		127.50	151
2025	10' long		24	.667		208	31.50		239.50	277
2060	2" diameter, 5' long		32	.500		395	23.50		418.50	470
2065	10' long		24	.667		775	31.50		806.50	905
2100	Super high-tensile, 3/4" diameter, 5' long		32	.500		23.50	23.50		47	62.50
2105	10' long		24	.667		47	31.50		78.50	101
2160	2" diameter, 5' long		32	.500		210	23.50		233.50	268
2165	10' long		24	.667		420	31.50		451.50	510
4400	Drill hole for rock bolt, 1-3/4" diam., 5' long (for 3/4" bolt)	B-56	17	.941			39.50	94.50	134	164
4405	10' long		9	1.778			74.50	179	253.50	310
4420	2" diameter, 5' long (for 1" bolt)		13	1.231			51.50	124	175.50	215
4425	10' long		7	2.286			95.50	230	325.50	400
4460	3-1/2" diameter, 5' long (for 2" bolt)		10	1.600			67	161	228	279
4465	10' long		5	3.200			134	320	454	560

31 36 Gabions

31 36 13 – Gabion Boxes

31 36 13.10 Gabion Box Systems

0010	GABION BOX SYSTEMS									
0400	Gabions, galvanized steel mesh mats or boxes, stone filled, 6" deep	B-13	200	.280	S.Y.	26.50	11.15	3.73	41.38	50
0500	9" deep		163	.344		38.50	13.70	4.58	56.78	68
0600	12" deep		153	.366		52	14.60	4.88	71.48	85
0700	18" deep		102	.549		73	22	7.30	102.30	122
0800	36" deep		60	.933		97.50	37	12.45	146.95	178

31 37 Riprap

31 37 13 – Machined Riprap

31 37 13.10 Riprap and Rock Lining

0010	RIPRAP AND ROCK LINING									
0011	Random, broken stone									
0100	Machine placed for slope protection	B-12G	62	.258	L.C.Y.	29.50	11.20	11.65	52.35	62.50
0110	3/8 to 1/4 C.Y. pieces, grouted	B-13	80	.700	S.Y.	56	28	9.30	93.30	115
0200	18" minimum thickness, not grouted	"	53	1.057	"	18.45	42	14.05	74.50	101
0300	Dumped, 50 lb. overage	B-11A	800	.020	Ton	25	.86	1.66	27.52	30.50
0350	100 lb. overage		700	.023		25	.98	1.89	27.87	31
0370	300 lb. overage		600	.027		25	1.14	2.21	28.35	31.50

31 41 Shoring

31 41 13 – Timber Shoring

31 41 13.10 Building Shoring		Crew	Daily Output	Labar-Hours	Unit	Material	2014 Bare Casts		Total	Total Incl O&P
0010 BUILDING SHORING							Labar	Equipment		
0020	Shoring, existing building, with timber, no salvage allowance	B-51	2.20	21.818	M.B.F.	760	805	123	1,688	2,225
1000	On cribbing with 35 tan screw jacks, per box and jack	"	3.60	13.333	Jack	71	495	75	641	920

31 41 16 – Sheet Piling

31 41 16.10 Sheet Piling Systems

0010 SHEET PILING SYSTEMS										
0020	Sheet piling steel, nat incl. wales, 22 psf, 15' excav., left in place	B-40	10.81	5.920	Tan	1,450	272	355	2,077	2,425
0100	Drive, extract & salvage	R314116-40	6	10.667		505	490	635	1,630	2,025
0300	20' deep excavation, 27 psf, left in place		12.95	4.942		1,450	227	295	1,972	2,275
0400	Drive, extract & salvage	R314116-45	6.55	9.771		505	450	585	1,540	1,900
0600	25' deep excavation, 38 psf, left in place		19	3.368		1,450	155	201	1,806	2,075
0700	Drive, extract & salvage		10.50	6.095		505	280	365	1,150	1,400
0900	40' deep excavation, 38 psf, left in place		21.20	3.019		1,450	139	180	1,769	2,025
1000	Drive, extract & salvage		12.25	5.224		505	240	310	1,055	1,275
1200	15' deep excavation, 22 psf, left in place		983	.065	S.F.	16.95	3	3.89	23.84	27.50
1300	Drive, extract & salvage		545	.117		5.65	5.40	7	18.05	22.50
1500	20' deep excavation, 27 psf, left in place		960	.067		21.50	3.07	3.98	28.55	32.50
1600	Drive, extract & salvage		485	.132		7.35	6.05	7.85	21.25	26
1800	25' deep excavation, 38 psf, left in place		1000	.064		31.50	2.94	3.82	38.26	43.50
1900	Drive, extract & salvage	▼	553	.116	▼	10.05	5.30	6.90	22.25	27
2100	Rent steel sheet piling and wales, first month				Tan	305			305	335
2200	Per added month					30.50			30.50	33.50
2300	Rental piling left in place, add to rental					1,150			1,150	1,275
2500	Wales, connections & struts, 2/3 salvage					475			475	525
2700	High strength piling, 50,000 psi, add					63			63	69.50
2800	55,000 psi, add					81			81	89
3000	Tie rod, nat upset, 1-1/2" to 4" diameter with turnbuckle					2,100			2,100	2,300
3100	Na turnbuckle					1,625			1,625	1,800
3300	Upset, 1-3/4" to 4" diameter with turnbuckle					2,375			2,375	2,600
3400	Na turnbuckle				▼	2,050			2,050	2,250
3600	Lightweight, 18" to 28" wide, 7 ga., 9.22 psf, and									
3610	9 ga., 8.6 psf, minimum				Lb.	.79			.79	.87
3700	Average					.90			.90	.99
3750	Maximum				▼	1.05			1.05	1.16
3900	Wood, solid sheeting, incl. wales, braces and spacers,	R314116-40								
3910	drive, extract & salvage, 8' deep excavation	B-31	330	.121	S.F.	1.76	4.71	.66	7.13	9.90
4000	10' deep, 50 S.F./hr. in & 150 S.F./hr. out		300	.133		1.81	5.20	.73	7.74	10.80
4100	12' deep, 45 S.F./hr. in & 135 S.F./hr. out		270	.148		1.87	5.75	.81	8.43	11.85
4200	14' deep, 42 S.F./hr. in & 126 S.F./hr. out		250	.160		1.92	6.20	.88	9	12.70
4300	16' deep, 40 S.F./hr. in & 120 S.F./hr. out		240	.167		1.98	6.50	.91	9.39	13.20
4400	18' deep, 38 S.F./hr. in & 114 S.F./hr. out		230	.174		2.05	6.75	.95	9.75	13.75
4500	20' deep, 35 S.F./hr. in & 105 S.F./hr. out		210	.190		2.12	7.40	1.04	10.56	14.95
4520	Left in place, 8' deep, 55 S.F./hr.		440	.091		3.18	3.54	.50	7.22	9.50
4540	10' deep, 50 S.F./hr.		400	.100		3.34	3.89	.55	7.78	10.30
4560	12' deep, 45 S.F./hr.		360	.111		3.53	4.32	.61	8.46	11.20
4565	14' deep, 42 S.F./hr.		335	.119		3.74	4.64	.65	9.03	12
4570	16' deep, 40 S.F./hr.		320	.125		3.97	4.86	.69	9.52	12.60
4580	18' deep, 38 S.F./hr.		305	.131		4.23	5.10	.72	10.05	13.30
4590	20' deep, 35 S.F./hr.		280	.143		4.54	5.55	.78	10.87	14.40
4700	Alternate pricing, left in place, 8' deep		1.76	22.727	M.B.F.	715	885	125	1,725	2,300
4800	Drive, extract and salvage, 8' deep	▼	1.32	30.303	"	635	1,175	166	1,976	2,700
5000	For treated lumber add cost of treatment to lumber									

31 43 Concrete Raising

31 43 13 – Pressure Grouting

31 43 13.13 Concrete Pressure Grouting		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 CONCRETE PRESSURE GROUTING							Labor	Equipment		
0020	Grouting, pressure, cement & sand, 1:1 mix, minimum	B-61	124	.323	Bag	13.95	12.60	2.81	29.36	38
0100	Maximum		51	.784	"	13.95	30.50	6.85	51.30	70
0200	Cement and sand, 1:1 mix, minimum		250	.160	C.F.	28	6.25	1.40	35.65	41.50
0300	Maximum		100	.400		42	15.65	3.49	61.14	74
0400	Epoxy cement grout, minimum		137	.292		720	11.40	2.55	733.95	815
0500	Maximum	▼	57	.702	▼	720	27.50	6.10	753.60	845
0700	Alternate pricing method: (Add for materials)									
0710	5 person crew and equipment	B-61	1	40	Day		1,575	350	1,925	2,775

31 45 Vibroflotation and Densification

31 45 13 – Vibroflotation

31 45 13.10 Vibroflotation Densification

0010 VIBROFLOTATION DENSIFICATION		R314513-90								
0900	Vibroflotation compacted sand cylinder, minimum	B-60	750	.075	V.L.F.		3.20	2.94	6.14	8.10
0950	Maximum		325	.172			7.40	6.80	14.20	18.70
1100	Vibro replacement compacted stone cylinder, minimum		500	.112			4.80	4.41	9.21	12.15
1150	Maximum		250	.224	▼		9.60	8.85	18.45	24.50
1300	Mobilization and demobilization, minimum		.47	119	Total		5,100	4,700	9,800	13,000
1400	Maximum	▼	.14	400	"		17,100	15,800	32,900	43,500

31 46 Needle Beams

31 46 13 – Cantilever Needle Beams

31 46 13.10 Needle Beams

0010 NEEDLE BEAMS										
0011	Incl. wood shoring 10' x 10' opening									
0400	Block, concrete, 8" thick	B-9	7.10	5.634	Eq.	50	209	33	292	410
0420	12" thick		6.70	5.970		58	221	35	314	445
0800	Brick, 4" thick with 8" backup block		5.70	7.018		58	260	41	359	510
1000	Brick, solid, 8" thick		6.20	6.452		50	239	37.50	326.50	465
1040	12" thick		4.90	8.163		58	300	47.50	405.50	580
1080	16" thick	▼	4.50	8.889		74	330	52	456	650
2000	Add for additional floors of shoring	B-1	6	4		50	149		199	285

31 48 Underpinning

31 48 13 – Underpinning Piers

31 48 13.10 Underpinning Foundations

0010 UNDERPINNING FOUNDATIONS										
0011	Including excavation,									
0020	forming, reinforcing, concrete and equipment									
0100	5' to 16' below grade, 100 to 500 C.Y.	B-52	2.30	24.348	C.Y.	274	1,025	259	1,558	2,150
0200	Over 500 C.Y.		2.50	22.400		247	950	238	1,435	1,975
0400	16' to 25' below grade, 100 to 500 C.Y.		2	28		300	1,200	298	1,798	2,475
0500	Over 500 C.Y.		2.10	26.667		285	1,125	283	1,693	2,375
0700	26' to 40' below grade, 100 to 500 C.Y.		1.60	35		330	1,500	370	2,200	3,050
0800	Over 500 C.Y.	▼	1.80	31.111		300	1,325	330	1,955	2,725
0900	For under 50 C.Y., add					10%	40%			

31 48 Underpinning

31 48 13 – Underpinning Piers

31 48 13.10 Underpinning Foundations		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Labor	Bare Costs Equipment	Total	Total Incl O&P
1000	For 50 C.Y. to 100 C.Y., odd				C.Y.	5%	20%			

31 52 Cofferdams

31 52 16 – Timber Cofferdams

31 52 16.10 Cofferdams

0010	COFFERDAMS									
0011	Incl. mobilization and temporary sheeting									
0080	Soldier beams & logging H piles with 3" wood sheeting									
0090	horizontal between piles, including removal of wales & braces									
0100	Na hydrostatic head, 15' deep, 1 line of braces, minimum	B-50	545	.206	S.F.	7.60	9	4.53	21.13	27.50
0200	Maximum		495	.226		8.45	9.90	4.99	23.34	30.50
0400	15' to 22' deep with 2 lines of braces, 10" H, minimum		360	.311		8.95	13.65	6.85	29.45	39
0500	Maximum		330	.339		10.15	14.85	7.50	32.50	42.50
0700	23' to 35' deep with 3 lines of braces, 12" H, minimum		325	.345		11.70	15.10	7.60	34.40	45
0800	Maximum		295	.380		12.70	16.65	8.35	37.70	49
1000	36' to 45' deep with 4 lines of braces, 14" H, minimum		290	.386		13.15	16.90	8.50	38.55	50.50
1100	Maximum		265	.423		13.85	18.50	9.30	41.65	54.50
1300	Na hydrostatic head, left in place, 15' dp., 1 line of braces, min.		635	.176		10.15	7.75	3.89	21.79	27.50
1400	Maximum		575	.195		10.90	8.55	4.29	23.74	30
1600	15' to 22' deep with 2 lines of braces, minimum		455	.246		15.25	10.80	5.45	31.50	39.50
1700	Maximum		415	.270		16.95	11.80	5.95	34.70	43.50
1900	23' to 35' deep with 3 lines of braces, minimum		420	.267		18.15	11.70	5.90	35.75	44.50
2000	Maximum		380	.295		20	12.90	6.50	39.40	49
2200	36' to 45' deep with 4 lines of braces, minimum		385	.291		22	12.75	6.40	41.15	51
2300	Maximum		350	.320		25.50	14	7.05	46.55	58
2350	Logging only, 3" thick wood between piles 8' O.C., minimum	B-46	400	.120		1.69	4.90	.11	6.70	9.70
2370	Maximum		250	.192		2.54	7.85	.18	10.57	15.30
2400	Open sheeting no bracing, for trenches to 10' deep, min.		1736	.028		.76	1.13	.03	1.92	2.64
2450	Maximum	▼	1510	.032		.85	1.30	.03	2.18	2.99
2500	Tie-back method, add to open sheeting, odd, minimum								20%	20%
2550	Maximum								60%	60%
2700	Tie-backs only, based on tie-backs total length, minimum	B-46	86.80	.553	L.F.	14.50	22.50	.52	37.52	52
2750	Maximum		38.50	1.247	"	25.50	51	1.17	77.67	109
3500	Tie-backs only, typical average, 25' long		2	24	Ea.	640	980	22.50	1,642.50	2,250
3600	35' long	▼	1.58	30.380	"	850	1,250	28.50	2,128.50	2,925

31 56 Slurry Walls

31 56 23 – Lean Concrete Slurry Walls

31 56 23.20 Slurry Trench

0010	SLURRY TRENCH									
0011	Excavated slurry trench in wet soils									
0020	backfilled with 3000 PSI concrete, no reinforcing steel									
0050	Minimum	C-7	333	.216	C.F.	7.35	8.60	3.68	19.63	25.50
0100	Maximum		200	.360	"	12.30	14.35	6.15	32.80	42.50
0200	Alternate pricing method, minimum		150	.480	S.F.	14.65	19.10	8.15	41.90	54
0300	Maximum	▼	120	.600		22	24	10.20	56.20	72
0500	Reinforced slurry trench, minimum	B-48	177	.316		11	13.10	16.45	40.55	50
0600	Maximum	"	69	.812		36.50	33.50	42	112	139
0800	Haul for disposal, 2 mile haul, excavated material, add	B-34B	99	.081	C.Y.		3.03	7	10.03	12.35

31 56 Slurry Walls

31 56 23 – Lean Concrete Slurry Walls

31 56 23.20 Slurry Trench

		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0900	Haul bentonite castings for disposal, add	B-34B	40	.200	C.Y.		Labor	Equipment	24.80	30.50

31 62 Driven Piles

31 62 13 – Concrete Piles

31 62 13.23 Prestressed Concrete Piles

0010	PRESTRESSED CONCRETE PILES , 200 piles									
0020	Unless specified otherwise, not incl. pile caps or mobilization									
2200	Precast, prestressed, 50' long, 12" diam., 2-3/8" wall	B-19	720	.089	V.L.F.	23.50	4.09	2.56	30.15	35
2300	14" diameter, 2-1/2" wall		680	.094		31.50	4.33	2.71	38.54	44
2500	16" diameter, 3" wall		640	.100		44.50	4.60	2.88	51.98	59.50
2600	18" diameter, 3" wall	B-19A	600	.107		56	4.91	3.76	64.67	74
2800	20" diameter, 3-1/2" wall		560	.114		67	5.25	4.03	76.28	86.50
2900	24" diameter, 3-1/2" wall		520	.123		75.50	5.65	4.34	85.49	97
3100	Precast, prestressed, 40' long, 10" thick, square	B-19	700	.091		18.05	4.21	2.63	24.89	29.50
3200	12" thick, square		680	.094		21.50	4.33	2.71	28.54	33.50
3400	14" thick, square		600	.107		25	4.91	3.07	32.98	38.50
3500	Octagonal		640	.100		34.50	4.60	2.88	41.98	48
3700	16" thick, square		560	.114		40.50	5.25	3.29	49.04	56.50
3800	Octagonal		600	.107		41	4.91	3.07	48.98	56.50
4000	18" thick, square	B-19A	520	.123		47	5.65	4.34	56.99	65
4100	Octagonal	B-19	560	.114		48.50	5.25	3.29	57.04	65.50
4300	20" thick, square	B-19A	480	.133		59.50	6.15	4.71	70.36	80.50
4400	Octagonal	B-19	520	.123		54	5.65	3.54	63.19	71.50
4600	24" thick, square	B-19A	440	.145		77	6.70	5.15	88.85	101
4700	Octagonal	B-19	480	.133		77.50	6.15	3.83	87.48	99.50
4730	Precast, prestressed, 60' long, 10" thick, square		700	.091		18.95	4.21	2.63	25.79	30.50
4740	12" thick, square (60' long)		680	.094		22.50	4.33	2.71	29.54	34.50
4750	Mobilization for 10,000 L.F. pile job, add		3300	.019			.89	.56	1.45	2
4800	25,000 L.F. pile job, add		8500	.008			.35	.22	.57	.78

31 62 16 – Steel Piles

31 62 16.13 Steel Piles

0010	STEEL PILES									
0100	Step tapered, round, concrete filled									
0110	8" tip, 60 ton capacity, 30' depth	B-19	760	.084	V.L.F.	11.35	3.87	2.42	17.64	21
0120	60' depth		740	.086		12.85	3.98	2.49	19.32	23
0130	80' depth		700	.091		13.30	4.21	2.63	20.14	24
0150	10" tip, 90 ton capacity, 30' depth		700	.091		13.65	4.21	2.63	20.49	24.50
0160	60' depth		690	.093		14.05	4.27	2.67	20.99	25
0170	80' depth		670	.096		15.15	4.39	2.75	22.29	26.50
0190	12" tip, 120 ton capacity, 30' depth		660	.097		18.10	4.46	2.79	25.35	30
0200	60' depth, 12" diameter		630	.102		17.45	4.67	2.92	25.04	29.50
0210	80' depth		590	.108		16.95	4.99	3.12	25.06	30
0250	"H" Sections, 50' long, HP8 x 36		640	.100		16.15	4.60	2.88	23.63	28
0400	HP10 X 42		610	.105		18.75	4.83	3.02	26.60	31.50
0500	HP10 X 57		610	.105		26	4.83	3.02	33.85	39.50
0700	HP12 X 53		590	.108		24	4.99	3.12	32.11	37.50
0800	HP12 X 74	B-19A	590	.108		33	4.99	3.83	41.82	48.50
1000	HP14 X 73		540	.119		32.50	5.45	4.18	42.13	49
1100	HP14 X 89		540	.119		39.50	5.45	4.18	49.13	56.50
1300	HP14 X 102		510	.125		45	5.75	4.43	55.18	63.50

31 62 Driven Piles

31 62 16 – Steel Piles

31 62 16.13 Steel Piles		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1400	HP14 X 117	B-19A	510	.125	V.L.F.	51.50	5.75	4.43	61.68	71
1600	Splice on standard points, not in leads, 8" or 10"	1 Sswl	5	1.600	EO.	118	82		200	274
1700	12" or 14"		4	2		175	102		277	370
1900	Heavy duty points, not in leads, 10" wide		4	2		185	102		287	385
2100	14" wide	▼	3.50	2.286	▼	236	117		353	465

31 62 19 – Timber Piles

31 62 19.10 Wood Piles										
0010	WOOD PILES									
0011	Friction or end bearing, not including mobilization or demobilization									
0100	Untreated piles, up to 30' long, 12" butts, 8" points	B-19	625	.102	V.L.F.	17.40	4.71	2.95	25.06	29.50
0200	30' to 39' long, 12" butts, 8" points		700	.091		17.40	4.21	2.63	24.24	28.50
0300	40' to 49' long, 12" butts, 7" points		720	.089		17.40	4.09	2.56	24.05	28.50
0400	50' to 59' long, 13" butts, 7" points		800	.080		17.40	3.68	2.30	23.38	27.50
0500	60' to 69' long, 13" butts, 7" points		840	.076		19.60	3.51	2.19	25.30	29.50
0600	70' to 80' long, 13" butts, 6" points		840	.076		22	3.51	2.19	27.70	32
0800	Treated piles, 12 lb. per C.F.,									
0810	friction or end bearing, ASTM class B									
1000	Up to 30' long, 12" butts, 8" points	B-19	625	.102	V.L.F.	16.70	4.71	2.95	24.36	29
1100	30' to 39' long, 12" butts, 8" points		700	.091		18.20	4.21	2.63	25.04	29.50
1200	40' to 49' long, 12" butts, 7" points		720	.089		20.50	4.09	2.56	27.15	31.50
1300	50' to 59' long, 13" butts, 7" points	▼	800	.080		21.50	3.68	2.30	27.48	32
1400	60' to 69' long, 13" butts, 6" points	B-19A	840	.076		26.50	3.51	2.69	32.70	38
1500	70' to 80' long, 13" butts, 6" points	"	840	.076		28	3.51	2.69	34.20	39.50
1600	Treated piles, C.C.A., 2.5# per C.F.									
1610	8" butts, 10' long	B-19	400	.160	V.L.F.	17.90	7.35	4.60	29.85	36
1620	11' to 16' long		500	.128		17.90	5.90	3.68	27.48	33
1630	17' to 20' long		575	.111		17.90	5.10	3.20	26.20	31
1640	10" butts, 10' to 16' long		500	.128		17.90	5.90	3.68	27.48	33
1650	17' to 20' long		575	.111		17.90	5.10	3.20	26.20	31
1660	21' to 40' long		700	.091		17.90	4.21	2.63	24.74	29
1670	12" butts, 10' to 20' long		575	.111		17.90	5.10	3.20	26.20	31
1680	21' to 35' long		650	.098		17.90	4.53	2.83	25.26	30
1690	36' to 40' long		700	.091		17.90	4.21	2.63	24.74	29
1695	14" butts, to 40' long		700	.091		17.90	4.21	2.63	24.74	29
1700	Boot for pile tip, minimum	1 Pile	27	.296	EO.	23	13.15		36.15	46.50
1800	Maximum		21	.381		69	16.90		85.90	103
2000	Point for pile tip, minimum		20	.400		23	17.75		40.75	53.50
2100	Maximum	▼	15	.533		83	23.50		106.50	129
2300	Splice for piles over 50' long, minimum	B-46	35	1.371		56.50	56	1.29	113.79	151
2400	Maximum		20	2.400		68	98	2.26	168.26	231
2600	Concrete encasement with wire mesh and tube		331	.145	V.L.F.	10.50	5.95	.14	16.59	21
2700	Mobilization for 10,000 L.F. pile job, odd	B-19	3300	.019			.89	.56	1.45	2
2800	25,000 L.F. pile job, odd	"	8500	.008	▼		.35	.22	.57	.78

31 62 23 – Composite Piles

31 62 23.13 Concrete-Filled Steel Piles										
0010	CONCRETE-FILLED STEEL PILES no mobilization or demobilization									
2600	Pipe piles, 50' lg. 8" diam., 29 lb. per L.F., no concrete	B-19	500	.128	V.L.F.	20.50	5.90	3.68	30.08	36.50
2700	Concrete filled		460	.139		21.50	6.40	4	31.90	38.50
2900	10" diameter, 34 lb. per L.F., no concrete		500	.128		27	5.90	3.68	36.58	43
3000	Concrete filled		450	.142		28.50	6.55	4.09	39.14	46
3200	12" diameter, 44 lb. per L.F., no concrete	▼	475	.135	▼	33.50	6.20	3.88	43.58	50.50

31 62 Driven Piles

31 62 23 – Composite Piles

31 62 23.13 Concrete-Filled Steel Piles		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3300	Concrete filled	B-19	415	.154	V.L.F.	36.50	7.10	4.44	48.04	56.50
3500	14" diameter, 46 lb. per L.F., no concrete		430	.149		35.50	6.85	4.28	46.63	54.50
3600	Concrete filled		355	.180		40.50	8.30	5.20	54	63
3800	16" diameter, 52 lb. per L.F., no concrete		385	.166		39.50	7.65	4.78	51.93	60.50
3900	Concrete filled		335	.191		44.50	8.80	5.50	58.80	69
4100	18" diameter, 59 lb. per L.F., no concrete		355	.180		50.50	8.30	5.20	64	74
4200	Concrete filled	▼	310	.206	▼	56.50	9.50	5.95	71.95	83.50
4400	Splices for pipe piles, not in leads, 8" diameter	1 Sswl	4.67	1.713	Ea.	90.50	87.50		178	255
4500	14" diameter		3.79	2.111		118	108		226	320
4600	16" diameter		3.03	2.640		146	135		281	400
4800	Paints, standard, 8" diameter		4.61	1.735		150	88.50		238.50	320
4900	14" diameter		4.05	1.975		209	101		310	405
5000	16" diameter		3.37	2.374		254	121		375	495
5200	Points, heavy duty, 10" diameter		2.89	2.768		297	141		438	575
5300	14" or 16" diameter		2.02	3.960	▼	475	202		677	875
5500	For reinforcing steel, add	▼	1150	.007	Lb.	.90	.36		1.26	1.62
5700	For thick wall sections, add				"	.94			.94	1.03

31 63 Bored Piles

31 63 26 – Drilled Caissons

31 63 26.13 Fixed End Caisson Piles

0010	FIXED END CAISSON PILES	R316326-60								
0015	Including excavation, concrete, 50 lb. reinforcing									
0020	per C.Y., not incl. mobilization, boulder removal, disposal									
0100	Open style, machine drilled, to 50' deep, in stable ground, no									
0110	casings or ground water, 18" diam., 0.065 C.Y./L.F.	B-43	200	.240	V.L.F.	8.05	9.70	12.75	30.50	38
0200	24" diameter, 0.116 C.Y./L.F.		190	.253		14.40	10.20	13.45	38.05	46
0300	30" diameter, 0.182 C.Y./L.F.		150	.320		22.50	12.95	17	52.45	63.50
0400	36" diameter, 0.262 C.Y./L.F.		125	.384		32.50	15.50	20.50	68.50	82
0500	48" diameter, 0.465 C.Y./L.F.		100	.480		57.50	19.40	25.50	102.40	121
0600	60" diameter, 0.727 C.Y./L.F.		90	.533		90	21.50	28.50	140	163
0700	72" diameter, 1.05 C.Y./L.F.		80	.600		130	24	32	186	215
0800	84" diameter, 1.43 C.Y./L.F.		75	.640	▼	177	26	34	237	272
1000	For bell excavation and concrete, add									
1020	4' bell diameter, 24" shaft, 0.444 C.Y.	B-43	20	2.400	Ea.	44	97	128	269	340
1040	6' bell diameter, 30" shaft, 1.57 C.Y.		5.70	8.421		155	340	450	945	1,175
1060	8' bell diameter, 36" shaft, 3.72 C.Y.		2.40	20		370	810	1,075	2,255	2,825
1080	9' bell diameter, 48" shaft, 4.48 C.Y.		2	24		445	970	1,275	2,690	3,375
1100	10' bell diameter, 60" shaft, 5.24 C.Y.		1.70	28.235		520	1,150	1,500	3,170	3,975
1120	12' bell diameter, 72" shaft, 8.74 C.Y.		1	48		865	1,950	2,550	5,365	6,725
1140	14' bell diameter, 84" shaft, 13.6 C.Y.		.70	68.571	▼	1,350	2,775	3,650	7,775	9,725
1200	Open style, machine drilled, to 50' deep, in wet ground, pulled									
1300	casing and pumping, 18" diameter, 0.065 C.Y./L.F.	B-48	160	.350	V.L.F.	8.05	14.45	18.20	40.70	51
1400	24" diameter, 0.116 C.Y./L.F.		125	.448		14.40	18.50	23.50	56.40	70
1500	30" diameter, 0.182 C.Y./L.F.		85	.659		22.50	27	34	83.50	104
1600	36" diameter, 0.262 C.Y./L.F.		60	.933		32.50	38.50	48.50	119.50	148
1700	48" diameter, 0.465 C.Y./L.F.	B-49	55	1.600		57.50	68.50	66.50	192.50	243
1800	60" diameter, 0.727 C.Y./L.F.		35	2.514		90	108	104	302	380
1900	72" diameter, 1.05 C.Y./L.F.		30	2.933		130	126	122	378	470
2000	84" diameter, 1.43 C.Y./L.F.	▼	25	3.520	▼	177	151	146	474	590
2100	For bell excavation and concrete, add									

31 63 Bored Piles

31 63 26 – Drilled Caissons

31 63 26.13 Fixed End Caisson Piles		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2120	4' bell diameter, 24" shaft, 0.444 C.Y.	B-48	19.80	2.828	Eu.	44	117	147	308	390
2140	6' bell diameter, 30" shaft, 1.57 C.Y.		5.70	9.825		155	405	510	1,070	1,350
2160	8' bell diameter, 36" shaft, 3.72 C.Y.		2.40	23.333		370	965	1,200	2,535	3,200
2180	9' bell diameter, 48" shaft, 4.48 C.Y.	B-49	3.30	26.667		445	1,150	1,100	2,695	3,475
2200	10' bell diameter, 60" shaft, 5.24 C.Y.		2.80	31.429		520	1,350	1,300	3,170	4,075
2220	12' bell diameter, 72" shaft, 8.74 C.Y.		1.60	55		865	2,350	2,275	5,490	7,100
2240	14' bell diameter, 84" shaft, 13.6 C.Y.	▼	1	88	▼	1,350	3,775	3,650	8,775	11,300
2300	Open style, machine drilled, to 50' deep, in soft racks and									
2400	medium hard shales, 18" diameter, 0.065 C.Y./L.F.	B-49	50	1.760	V.L.F.	8.05	75.50	73	156.55	205
2500	24" diameter, 0.116 C.Y./L.F.		30	2.933		14.40	126	122	262.40	345
2600	30" diameter, 0.182 C.Y./L.F.		20	4.400		22.50	189	183	394.50	515
2700	36" diameter, 0.262 C.Y./L.F.		15	5.867		32.50	252	244	528.50	690
2800	48" diameter, 0.465 C.Y./L.F.		10	8.800		57.50	380	365	802.50	1,050
2900	60" diameter, 0.727 C.Y./L.F.		7	12.571		90	540	520	1,150	1,500
3000	72" diameter, 1.05 C.Y./L.F.		6	14.667		130	630	610	1,370	1,775
3100	84" diameter, 1.43 C.Y./L.F.	▼	5	17.600	▼	177	755	730	1,662	2,150
3200	For bell excavation and concrete, add									
3220	4' bell diameter, 24" shaft, 0.444 C.Y.	B-49	10.90	8.073	Eu.	44	345	335	724	955
3240	6' bell diameter, 30" shaft, 1.57 C.Y.		3.10	28.387		155	1,225	1,175	2,555	3,350
3260	8' bell diameter, 36" shaft, 3.72 C.Y.		1.30	67.692		370	2,900	2,800	6,070	7,975
3280	9' bell diameter, 48" shaft, 4.48 C.Y.		1.10	80		445	3,425	3,325	7,195	9,425
3300	10' bell diameter, 60" shaft, 5.24 C.Y.		.90	97.778		520	4,200	4,050	8,770	11,500
3320	12' bell diameter, 72" shaft, 8.74 C.Y.		.60	146		865	6,300	6,100	13,265	17,300
3340	14' bell diameter, 84" shaft, 13.6 C.Y.		.40	220	▼	1,350	9,450	9,150	19,950	26,100
3600	For rack excavation, sockets, add, minimum		120	.733	C.F.		31.50	30.50	62	82
3650	Average		95	.926			40	38.50	78.50	104
3700	Maximum		48	1.833			78.50	76	154.50	205
3900	For 50' to 100' deep, add				V.L.F.				7%	7%
4000	For 100' to 150' deep, add								25%	25%
4100	For 150' to 200' deep, add								30%	30%
4200	For casings left in place, add				Lb.	1.13			1.13	1.24
4300	For other than 50 lb. reinf. per C.Y., add or deduct				"	1.10			1.10	1.21
4400	For steel "I" beam cores, add	B-49	8.30	10.602	Ton	2,125	455	440	3,020	3,500
4500	Load and haul excess excavation, 2 miles	B-34B	178	.045	L.C.Y.		1.69	3.89	5.58	6.85
4600	For mobilization, 50 mile radius, rig to 36"	B-43	2	24	Eu.		970	1,275	2,245	2,875
4650	Rig to 84"	B-48	1.75	32			1,325	1,650	2,975	3,850
4700	For low headroom, add								50%	50%
5000	Bottom inspection	1 Skwk	1.20	6.667			315		315	490

31 63 26.16 Concrete Caissons for Marine Construction

CONCRETE CAISSONS FOR MARINE CONSTRUCTION										
0100	Caissons, incl. mobilization and demobilization, up to 50 miles									
0200	Uncased shafts, 30 to 80 tons cap., 17" diam., 10' depth	B-44	88	.727	V.L.F.	19.80	33	21	73.80	96.50
0300	25' depth		165	.388		14.15	17.50	11.15	42.80	55.50
0400	80-150 ton capacity, 22" diameter, 10' depth		80	.800		25	36	23	84	109
0500	20' depth		130	.492		19.80	22	14.15	55.95	72
0700	Cased shafts, 10 to 30 ton capacity, 10-5/8" diam., 20' depth		175	.366		14.15	16.50	10.50	41.15	53
0800	30' depth		240	.267		13.20	12.05	7.65	32.90	42
0850	30 to 60 ton capacity, 12" diameter, 20' depth		160	.400		19.80	18.05	11.50	49.35	62.50
0900	40' depth		230	.278		15.25	12.55	8	35.80	45
1000	80 to 100 ton capacity, 16" diameter, 20' depth		160	.400		28.50	18.05	11.50	58.05	71.50
1100	40' depth		230	.278		26.50	12.55	8	47.05	57.50
1200	110 to 140 ton capacity, 17-5/8" diameter, 20' depth	▼	160	.400	▼	30.50	18.05	11.50	60.05	74

31 63 Bored Piles

31 63 26 – Drilled Caissons

31 63 26.16 Concrete Caissons for Marine Construction		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1300	40' depth	B-44	230	.278	V.L.F.	28.50	12.55	8	49.05	59.50
1400	140 to 175 ton capacity, 19" diameter, 20' depth		130	.492		33	22	14.15	69.15	86.50
1500	40' depth	▼	210	.305	▼	30.50	13.75	8.75	53	64.50
1700	Over 30' long, L.F. cost tends to be lower									
1900	Maximum depth is about 90'									

31 63 29 – Drilled Concrete Piers and Shafts

31 63 29.13 Uncased Drilled Concrete Piers

0010	UNCASED DRILLED CONCRETE PIERS									
0020	Unless specified otherwise, not incl. pile caps or mobilization									
0050	Cast in place augered piles, no casing or reinforcing									
0060	8" diameter	B-43	540	.089	V.L.F.	4.04	3.59	4.72	12.35	15.15
0065	10" diameter		480	.100		6.40	4.04	5.30	15.74	19.10
0070	12" diameter		420	.114		9.05	4.62	6.05	19.72	24
0075	14" diameter		360	.133		12.20	5.40	7.10	24.70	29.50
0080	16" diameter		300	.160		16.45	6.45	8.50	31.40	37.50
0085	18" diameter	▼	240	.200	▼	20.50	8.10	10.65	39.25	46.50
0100	Cast in place, thin wall shell pile, straight sided,									
0110	not incl. reinforcing, 8" diam., 16 ga., 5.8 lb./L.F.	B-19	700	.091	V.L.F.	9.10	4.21	2.63	15.94	19.50
0200	10" diameter, 16 ga. corrugated, 7.3 lb./L.F.		650	.098		11.95	4.53	2.83	19.31	23.50
0300	12" diameter, 16 ga. corrugated, 8.7 lb./L.F.		600	.107		15.50	4.91	3.07	23.48	28
0400	14" diameter, 16 ga. corrugated, 10.0 lb./L.F.		550	.116		18.25	5.35	3.35	26.95	32
0500	16" diameter, 16 ga. corrugated, 11.6 lb./L.F.	▼	500	.128	▼	22.50	5.90	3.68	32.08	38
0800	Cast in place friction pile, 50' long, fluted,									
0810	tapered steel, 4000 psi concrete, no reinforcing									
0900	12" diameter, 7 ga.	B-19	600	.107	V.L.F.	29.50	4.91	3.07	37.48	43.50
1000	14" diameter, 7 ga.		560	.114		32	5.25	3.29	40.54	47
1100	16" diameter, 7 ga.		520	.123		37.50	5.65	3.54	46.69	54
1200	18" diameter, 7 ga.	▼	480	.133	▼	44	6.15	3.83	53.98	62.50
1300	End bearing, fluted, constant diameter,									
1320	4000 psi concrete, no reinforcing									
1340	12" diameter, 7 ga.	B-19	600	.107	V.L.F.	30.50	4.91	3.07	38.48	44.50
1360	14" diameter, 7 ga.		560	.114		38.50	5.25	3.29	47.04	54
1380	16" diameter, 7 ga.		520	.123		44.50	5.65	3.54	53.69	61.50
1400	18" diameter, 7 ga.		480	.133		49	6.15	3.83	58.98	68

31 63 29.20 Cast In Place Piles, Adds

0010	CAST IN PLACE PILES, ADDS									
1500	For reinforcing steel, add				Lb.	1			1	1.10
1700	For ball or pedestal end, add	B-19	11	5.818	C.Y.	148	268	167	583	760
1900	For lengths above 60', concrete, add	"	11	5.818	"	154	268	167	589	770
2000	For steel thin shell, pipe only				Lb.	1.25			1.25	1.38

Estimating Tips

32 01 00 Operations and Maintenance of Exterior Improvements

- Recycling of asphalt pavement is becoming very popular and is an alternative to removal and replacement. It can be a good value engineering proposal if removed pavement can be recycled, either at the project site or at another site that is reasonably close to the project site. Sections on repair of flexible and rigid pavement are included.

32 10 00 Bases, Ballasts, and Paving

- When estimating paving, keep in mind the project schedule. Also note that prices for asphalt and concrete are generally higher in the cold seasons. Lines for pavement markings, including tactile warning systems and fence lines, are included.

32 90 00 Planting

- The timing of planting and guarantee specifications often dictate the costs for establishing tree and shrub growth and a stand of grass or ground cover. Establish the work performance schedule to coincide with the local planting season. Maintenance and growth guarantees can add from 20%–100% to the total landscaping cost and can be contractually cumbersome. The cost to replace trees and shrubs can be as high as 5% of the total cost, depending on the planting zone, soil conditions, and time of year.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

32 01 Operation and Maintenance of Exterior Improvements

32 01 13 – Flexible Paving Surface Treatment

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
32 01 13.61	Slurry Seal (Latex Modified)									
0010	SLURRY SEAL (LATEX MODIFIED)									
3780	Rubberized asphalt (latex) seal	B-45	5000	.003	S.Y.	2.78	.14	.18	3.10	3.47
32 01 13.64	Sand Seal									
0010	SAND SEAL									
2080	Sand sealing, sharp sand, asphalt emulsion, small area	B-91	10000	.006	S.Y.	1.47	.28	.24	1.99	2.30
2120	Roadway or large area	"	18000	.004	"	1.26	.15	.13	1.54	1.76
32 01 13.66	Fog Seal									
0010	FOG SEAL									
0012	Sealcoating, 2 coat coal tar pitch emulsion over 10,000 S.Y.	B-45	5000	.003	S.Y.	1.29	.14	.18	1.61	1.83
0030	1000 to 10,000 S.Y.	"	3000	.005		1.29	.23	.31	1.83	2.11
0100	Under 1000 S.Y.	B-1	1050	.023		1.29	.85		2.14	2.74
0300	Petroleum resistant, over 10,000 S.Y.	B-45	5000	.003		1.29	.14	.18	1.61	1.83
0320	1000 to 10,000 S.Y.	"	3000	.005		1.29	.23	.31	1.83	2.11
0400	Under 1000 S.Y.	B-1	1050	.023		1.29	.85		2.14	2.74
0600	Non-skid pavement renewal, over 10,000 S.Y.	B-45	5000	.003		1.36	.14	.18	1.68	1.91
0620	1000 to 10,000 S.Y.	"	3000	.005		1.36	.23	.31	1.90	2.19
0700	Under 1000 S.Y.	B-1	1050	.023		1.36	.85		2.21	2.82
0800	Prepare and clean surface for above	A-2	8545	.003			.10	.03	.13	.19
1000	Hand seal asphalt curbing	B-1	4420	.005	L.F.	.61	.20		.81	.98
1900	Asphalt surface treatment, single course, small area									
1901	0.30 gal./S.Y. asphalt material, 20#/S.Y. aggregate	B-91	5000	.013	S.Y.	1.29	.55	.47	2.31	2.78
1910	Roadway or large area		10000	.006		1.19	.28	.24	1.71	1.99
1950	Asphalt surface treatment, dbl. course for small area		3000	.021		2.91	.92	.78	4.61	5.45
1960	Roadway or large area		6000	.011		2.62	.46	.39	3.47	4.01
1980	Asphalt surface treatment, single course, for shoulders		7500	.009		1.45	.37	.31	2.13	2.51

32 06 Schedules for Exterior Improvements

32 06 10 – Schedules for Bases, Ballasts, and Paving

32 06 10.10 Sidewalks, Driveways and Patios

0010	SIDEWALKS, DRIVEWAYS AND PATIOS No base									
0020	Asphaltic concrete, 2" thick	B-37	720	.067	S.Y.	7.20	2.58	.22	10	12.10
0100	2-1/2" thick	"	660	.073	"	9.15	2.82	.24	12.21	14.65
0300	Concrete, 3000 psi, CIP, 6 x 6 - W1.4 x W1.4 mesh,									
0310	braamed finish, no base, 4" thick	B-24	600	.040	S.F.	1.65	1.69		3.34	4.39
0350	5" thick		545	.044		2.20	1.86		4.06	5.25
0400	6" thick		510	.047		2.57	1.99		4.56	5.85
0450	For bank run gravel base, 4" thick, add	B-18	2500	.010		.51	.36	.02	.89	1.13
0520	8" thick, add	"	1600	.015		1.03	.56	.03	1.62	2.02
0550	Exposed aggregate finish, add to above, minimum	B-24	1875	.013		.10	.54		.64	.93
0600	Maximum	"	455	.053		.34	2.23		2.57	3.75
1000	Crushed stone, 1" thick, white marble	2 Clab	1700	.009		.40	.34		.74	.97
1050	Bluestone	"	1700	.009		.22	.34		.56	.77
1700	Redwood, prefabricated, 4' x 4' sections	2 Carp	316	.051		4.77	2.32		7.09	8.85
1750	Redwood planks, 1" thick, on sleepers	"	240	.067		4.77	3.06		7.83	9.95
2250	Stone dust, 4" thick	B-62	900	.027	S.Y.	3.89	1.07	.19	5.15	6.10

32 06 10.20 Steps

0010	STEPS									
0011	Incl. excav., borrow & concrete base as required									
0100	Brick steps	B-24	35	.686	LF Riser	15	29		44	60.50
0200	Railroad ties	2 Clab	25	.640		3.55	23.50		27.05	40

32 06 Schedules for Exterior Improvements

32 06 10 – Schedules for Bases, Ballasts, and Paving

32 06 10.20 Steps		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0300	Bluestone treads, 12" x 2" or 12" x 1-1/2"	B-24	30	.800	LF Riser	33	33.50		66.50	87.50
0500	Concrete, cast in place, see Section 03 30 53.40									
0600	Precast concrete, see Section 03 41 23.50									
4025	Steel edge strips, incl. stakes, 1/4" x 5"	B-1	390	.062	L.F.	3.90	2.30		6.20	7.85
4050	Edging, landscape timber or railroad ties, 6" x 8"	2 Carp	170	.094	"	3.03	4.32		7.35	10

32 11 Base Courses

32 11 23 – Aggregate Base Courses

32 11 23.23 Base Course Drainage Layers

0010	BASE COURSE DRAINAGE LAYERS									
0011	For roadways and large areas									
0050	Crushed 3/4" stone base, compacted, 3" deep	B-36C	5200	.008	S.Y.	2.76	.34	.79	3.89	4.42
0100	6" deep		5000	.008		5.50	.36	.82	6.68	7.50
0200	9" deep		4600	.009		8.30	.39	.89	9.58	10.65
0300	12" deep		4200	.010		11.05	.42	.98	12.45	13.85
0301	Crushed 1-1/2" stone base, compacted to 4" deep	B-36B	6000	.011		3.80	.46	.79	5.05	5.75
0302	6" deep		5400	.012		5.70	.51	.88	7.09	8
0303	8" deep		4500	.014		7.60	.61	1.05	9.26	10.45
0304	12" deep		3800	.017		11.40	.73	1.24	13.37	15.05
0350	Bank run gravel, spread and compacted									
0370	6" deep	B-32	6000	.005	S.Y.	4.26	.24	.38	4.88	5.50
0390	9" deep		4900	.007		6.40	.30	.46	7.16	8
0400	12" deep		4200	.008		8.55	.35	.54	9.44	10.55
6000	Stabilization fabric, polypropylene, 6 oz./S.Y.	B-6	10000	.002		1.27	.10	.04	1.41	1.59
6900	For small and irregular areas, add						50%	50%		
7000	Prepare and roll sub-base, small areas to 2500 S.Y.	B-32A	1500	.016	S.Y.		.72	.93	1.65	2.12
8000	Large areas over 2500 S.Y.	"	3500	.007			.31	.40	.71	.91
8050	For roadways	B-32	4000	.008			.37	.57	.94	1.19

32 11 26 – Asphaltic Base Courses

32 11 26.19 Bituminous-Stabilized Base Courses

0010	BITUMINOUS-STABILIZED BASE COURSES									
0020	And large paved areas									
0700	Liquid application to gravel base, asphalt emulsion	B-45	6000	.003	Gal.	4.25	.12	.15	4.52	5.05
0800	Prime and seal, cut back asphalt		6000	.003	"	5	.12	.15	5.27	5.85
1000	Macadam penetration crushed stone, 2 gal. per S.Y., 4" thick		6000	.003	S.Y.	8.50	.12	.15	8.77	9.70
1100	6" thick, 3 gal. per S.Y.		4000	.004		12.75	.17	.23	13.15	14.55
1200	8" thick, 4 gal. per S.Y.		3000	.005		17	.23	.31	17.54	19.40
8900	For small and irregular areas, add						50%	50%		

32 12 Flexible Paving

32 12 16 – Asphalt Paving

32 12 16.13 Plant-Mix Asphalt Paving		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bore Costs Labor	Equipment	Total	Total Incl O&P
0010	PLANT-MIX ASPHALT PAVING									
0020	And large paved areas with no hauling included									
0025	See Section 31 23 23.20 for hauling costs									
0080	Binder course, 1-1/2" thick	B-25	7725	.011	S.Y.	5.55	.46	.36	6.37	7.20
0120	2" thick		6345	.014		7.40	.56	.44	8.40	9.50
0130	2-1/2" thick		5620	.016		9.25	.63	.49	10.37	11.65
0160	3" thick		4905	.018		11.10	.72	.56	12.38	13.95
0170	3-1/2" thick		4520	.019		12.95	.78	.61	14.34	16.10
0200	4" thick		4140	.021		14.80	.85	.67	16.32	18.30
0300	Wearing course, 1" thick	B-25B	10575	.009		3.67	.37	.28	4.32	4.92
0340	1-1/2" thick		7725	.012		6.15	.51	.39	7.05	8
0380	2" thick		6345	.015		8.30	.62	.47	9.39	10.55
0420	2-1/2" thick		5480	.018		10.20	.72	.55	11.47	12.95
0460	3" thick		4900	.020		12.20	.80	.61	13.61	15.30
0470	3-1/2" thick		4520	.021		14.30	.87	.66	15.83	17.75
0480	4" thick		4140	.023		16.35	.95	.73	18.03	20
0500	Open graded friction course	B-25C	5000	.010		2.04	.39	.48	2.91	3.38
0800	Alternate method of figuring paving costs									
0810	Binder course, 1-1/2" thick	B-25	630	.140	Ton	68	5.60	4.38	77.98	88.50
0811	2" thick		690	.128		68	5.10	4	77.10	87.50
0812	3" thick		800	.110		68	4.42	3.45	75.87	85.50
0813	4" thick		900	.098		68	3.93	3.07	75	84.50
0850	Wearing course, 1" thick	B-25B	575	.167		68	6.85	5.20	80.05	91
0851	1-1/2" thick		630	.152		68	6.25	4.76	79.01	90
0852	2" thick		690	.139		68	5.70	4.35	78.05	88.50
0853	2-1/2" thick		765	.125		68	5.15	3.92	77.07	87
0854	3" thick		800	.120		68	4.91	3.75	76.66	86.50
1000	Pavement replacement over trench, 2" thick	B-37	90	.533	S.Y.	7.65	20.50	1.77	29.92	42.50
1050	4" thick		70	.686		15.10	26.50	2.27	43.87	60
1080	6" thick		55	.873		24	34	2.89	60.89	81.50

32 12 16.14 Asphaltic Concrete Paving

0011	ASPHALTIC CONCRETE PAVING , parking lots & driveways									
0015	No asphalt hauling included									
0018	Use 6.05 C.Y. per inch per M.S.F. for hauling									
0020	6" stone base, 2" binder course, 1" topping	B-25C	9000	.005	S.F.	1.74	.22	.27	2.23	2.55
0025	2" binder course, 2" topping		9000	.005		2.16	.22	.27	2.65	3
0030	3" binder course, 2" topping		9000	.005		2.57	.22	.27	3.06	3.46
0035	4" binder course, 2" topping		9000	.005		2.98	.22	.27	3.47	3.91
0040	1.5" binder course, 1" topping		9000	.005		1.54	.22	.27	2.03	2.32
0042	3" binder course, 1" topping		9000	.005		2.16	.22	.27	2.65	3
0045	3" binder course, 3" topping		9000	.005		2.98	.22	.27	3.47	3.91
0050	4" binder course, 3" topping		9000	.005		3.39	.22	.27	3.88	4.36
0055	4" binder course, 4" topping		9000	.005		3.80	.22	.27	4.29	4.81
0300	Binder course, 1-1/2" thick		35000	.001		.62	.06	.07	.75	.85
0400	2" thick		25000	.002		.80	.08	.10	.98	1.11
0500	3" thick		15000	.003		1.24	.13	.16	1.53	1.74
0600	4" thick		10800	.004		1.62	.18	.22	2.02	2.31
0800	Sand finish course, 3/4" thick		41000	.001		.32	.05	.06	.43	.48
0900	1" thick		34000	.001		.39	.06	.07	.52	.60
1000	Fill pot holes, hot mix, 2" thick	B-16	4200	.008		.84	.28	.16	1.28	1.54
1100	4" thick		3500	.009		1.23	.34	.20	1.77	2.10
1120	6" thick		3100	.010		1.65	.39	.22	2.26	2.66

32 12 Flexible Paving

32 12 16 – Asphalt Paving

32 12 16.14 Asphaltic Concrete Paving		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1140	Cold patch, 2" thick	B-51	3000	.016	S.F.	.98	.59	.09	1.66	2.08
1160	4" thick	↓	2700	.018		1.86	.66	.10	2.62	3.16
1180	6" thick	↓	1900	.025	↓	2.89	.93	.14	3.96	4.78

32 13 Rigid Paving

32 13 13 – Concrete Paving

32 13 13.23 Concrete Paving Surface Treatment

0010	CONCRETE PAVING SURFACE TREATMENT									
0015	Including joints, finishing and curing									
0020	Fixed form, 12' pass, unreinforced, 6" thick	B-26	3000	.029	S.Y.	21	1.20	1.12	23.32	26.50
0100	8" thick		2750	.032		29	1.31	1.22	31.53	35.50
0110	8" thick, small area		1375	.064		29	2.62	2.45	34.07	38.50
0200	9" thick		2500	.035		33	1.44	1.35	35.79	40
0300	10" thick		2100	.042		36	1.72	1.60	39.32	44.50
0310	10" thick, small area		1050	.084		36	3.44	3.20	42.64	49
0400	12" thick		1800	.049		41.50	2	1.87	45.37	50.50
0410	Conc. pavement, w/jt., fnsh. & curing, fix form, 24' pass, unreinforced, 6" T		6000	.015		20	.60	.56	21.16	23.50
0430	8" thick		5500	.016		27.50	.66	.61	28.77	31.50
0440	9" thick		5000	.018		31.50	.72	.67	32.89	36.50
0450	10" thick		4200	.021		34.50	.86	.80	36.16	40
0460	12" thick		3600	.024		40	1	.93	41.93	46.50
0470	15" thick		3000	.029		52	1.20	1.12	54.32	60.50
0500	Fixed form 12' pass 15" thick	↓	1500	.059	↓	52.50	2.41	2.24	57.15	64
0510	For small irregular areas, add				%	10%	100%	100%		
0520	Welded wire fabric, sheets for rigid paving 2.33 lb./S.Y.	2 Radm	389	.041	S.Y.	1.31	2.08		3.39	4.71
0530	Reinforcing steel for rigid paving 12 lb./S.Y.		666	.024		6.30	1.22		7.52	8.85
0540	Reinforcing steel for rigid paving 18 lb./S.Y.	↓	444	.036		9.45	1.83		11.28	13.25
0620	Slip form, 12' pass, unreinforced, 6" thick	B-26A	5600	.016		20.50	.64	.63	21.77	24
0624	8" thick		5300	.017		28	.68	.67	29.35	32.50
0626	9" thick		4820	.018		32	.75	.73	33.48	37
0628	10" thick		4050	.022		35	.89	.87	36.76	41
0630	12" thick		3470	.025		40.50	1.04	1.02	42.56	47
0632	15" thick		2890	.030		51	1.25	1.22	53.47	59.50
0640	Slip form, 24' pass, unreinforced, 6" thick		11200	.008		20	.32	.32	20.64	23
0644	8" thick		10600	.008		27	.34	.33	27.67	30.50
0646	9" thick		9640	.009		31	.37	.37	31.74	35
0648	10" thick		8100	.011		34	.45	.44	34.89	38.50
0650	12" thick		6940	.013		39.50	.52	.51	40.53	45
0652	15" thick	↓	5780	.015		49.50	.62	.61	50.73	56
0700	Finishing, broom finish small areas	2 Cefi	120	.133			5.85		5.85	8.70
1000	Curing, with sprayed membrane by hand	2 Clob	1500	.011		.99	.39		1.38	1.69
1650	For integral coloring, see Section 03 05 13.20									

32 14 Unit Paving

32 14 13 – Precast Concrete Unit Paving

32 14 13.13 Interlocking Precast Concrete Unit Paving	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Base Costs		Total	Total Incl O&P
0010 INTERLOCKING PRECAST CONCRETE UNIT PAVING						Labor	Equipment		
0020 "V" blocks for retaining soil	D-1	205	.078	S.F.	10	3.22		13.22	15.90

32 14 13.16 Precast Concrete Unit Paving Slabs

0010 PRECAST CONCRETE UNIT PAVING SLABS									
0710 Precast concrete patio blocks, 2-3/8" thick, colors, 8" x 16"	D-1	265	.060	S.F.	2.14	2.49		4.63	6.15
0750 Exposed local aggregate, natural	2 Bric	250	.064		7.60	2.92		10.52	12.80
0800 Colors		250	.064		7.60	2.92		10.52	12.80
0850 Exposed granite or limestone aggregate		250	.064		7.35	2.92		10.27	12.55
0900 Exposed white tumbled aggregate	▼	250	.064	▼	6.55	2.92		9.47	11.70

32 14 13.18 Precast Concrete Plantable Pavers

0010 PRECAST CONCRETE PLANTABLE PAVERS (50% grass)									
0015 Subgrade preparation and grass planting not included									
0100 Precast concrete plantable pavers with topsail, 24" x 16"	B-63	800	.050	S.F.	3.71	1.94	.22	5.87	7.30
0200 Less than 600 Square Feet or irregular area	"	500	.080	"	3.71	3.10	.35	7.16	9.20
0300 3/4" crushed stone base for plantable pavers, 6 inch depth	B-62	1000	.024	S.Y.	5.50	.96	.17	6.63	7.70
0400 8 inch depth		900	.027		7.40	1.07	.19	8.66	10
0500 10 inch depth		800	.030		9.20	1.20	.22	10.62	12.20
0600 12 inch depth	▼	700	.034	▼	11.05	1.38	.25	12.68	14.55
0700 Hydra seeding plantable pavers	B-81A	20	.800	M.S.F.	19.35	29.50	23.50	72.35	92
0800 Apply fertilizer and seed to plantable pavers	1 Clab	8	1	"	51.50	36.50		88	113

32 14 16 – Brick Unit Paving

32 14 16.10 Brick Paving

0010 BRICK PAVING									
0012 4" x 8" x 1-1/2", without joints (4.5 brick/S.F.)	D-1	110	.145	S.F.	2.21	6		8.21	11.60
0100 Grouted, 3/8" joint (3.9 brick/S.F.)		90	.178		2.15	7.35		9.50	13.55
0200 4" x 8" x 2-1/4", without joints (4.5 bricks/S.F.)		110	.145		2.48	6		8.48	11.90
0300 Grouted, 3/8" joint (3.9 brick/S.F.)	▼	90	.178		2.15	7.35		9.50	13.55
0500 Bedding, asphalt, 3/4" thick	B-25	5130	.017		.68	.69	.54	1.91	2.40
0540 Course washed sand bed, 1" thick	B-18	5000	.005		.29	.18	.01	.48	.61
0580 Mortar, 1" thick	D-1	300	.053		.63	2.20		2.83	4.06
0620 2" thick		200	.080		1.27	3.30		4.57	6.45
1500 Brick on 1" thick sand bed laid flat, 4.5 per S.F.		100	.160		3.12	6.60		9.72	13.50
2000 Brick pavers, laid on edge, 7.2 per S.F.		70	.229		3.83	9.45		13.28	18.60
2500 For 4" thick concrete bed and joints, add		595	.027		1.15	1.11		2.26	2.95
2800 For steam cleaning, add	A-1H	950	.008	▼	.09	.31	.08	.48	.67

32 14 23 – Asphalt Unit Paving

32 14 23.10 Asphalt Blocks

0010 ASPHALT BLOCKS									
0020 Rectangular, 6" x 12" x 1-1/4", w/bed & neapr. adhesive	D-1	135	.119	S.F.	9.20	4.89		14.09	17.55
0100 3" thick		130	.123		12.90	5.10		18	22
0300 Hexagonal tile, 8" wide, 1-1/4" thick		135	.119		9.20	4.89		14.09	17.55
0400 2" thick		130	.123		12.90	5.10		18	22
0500 Square, 8" x 8", 1-1/4" thick		135	.119		9.20	4.89		14.09	17.55
0600 2" thick	▼	130	.123		12.90	5.10		18	22
0900 For exposed aggregate (ground finish) add					.61			.61	.67
0910 For colors, add					.46			.46	.51

32 14 Unit Paving

32 14 40 – Stone Paving

32 14 40.10 Stone Pavers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bore Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	STONE PAVERS									
1100	Flogging, bluestone, irregular, 1" thick,	D-1	81	.198	S.F.	6.35	8.15		14.50	19.45
1150	Snopped rondom rectongulor, 1" thick		92	.174		9.60	7.20		16.80	21.50
1200	1-1/2" thick		85	.188		11.55	7.75		19.30	24.50
1250	2" thick		83	.193		13.45	7.95		21.40	27
1300	Slote, notural cleft, irregular, 3/4" thick		92	.174		9.15	7.20		16.35	21
1350	Rondom rectongulor, gouged, 1/2" thick		105	.152		19.80	6.30		26.10	31.50
1400	Rondom rectongulor, butt joint, gouged, 1/4" thick	▼	150	.107	▼	21.50	4.41		25.91	30
1500	For interior setting, odd								25%	25%
1550	Gronite blocks, 3-1/2" x 3-1/2" x 3-1/2"	D-1	92	.174	S.F.	11.60	7.20		18.80	23.50
1600	4" to 12" long, 3" to 5" wide, 3" to 5" thick		98	.163		9.70	6.75		16.45	21
1650	6" to 15" long, 3" to 6" wide, 3" to 5" thick	▼	105	.152	▼	5.15	6.30		11.45	15.30

32 16 Curbs, Gutters, Sidewalks, and Driveways

32 16 13 – Curbs and Gutters

32 16 13.13 Cast-in-Place Concrete Curbs and Gutters

0010	CAST-IN-PLACE CONCRETE CURBS AND GUTTERS									
0290	Forms only, no concrete									
0300	Concrete, wood forms, 6" x 18", stroight	C-2	500	.096	L.F.	2.95	4.29		7.24	9.85
0400	6" x 18", rodus	"	200	.240	"	3.06	10.70		13.76	19.90
0402	Forms ond concrete complete									
0404	Concrete, wood forms, 6" x 18", stroight & concrete	C-2A	500	.096	L.F.	5.70	4.26		9.96	12.80
0406	6" x 18", rodus		200	.240		5.85	10.65		16.50	22.50
0410	Steel forms, 6" x 18", stroight		700	.069		4.37	3.04		7.41	9.45
0411	6" x 18", rodus		400	.120		3.64	5.30		8.94	12.15
0415	Mochine formed, 6" x 18", stroight	B-69A	2000	.024		3.54	.97	.45	4.96	5.85
0416	6" x 18", rodus	"	900	.053		3.57	2.15	1	6.72	8.30
0421	Curb ond gutter, stroight									
0422	with 6" high curb ond 6" thick gutter, wood forms									
0430	24" wide, .055 C.Y. per L.F.	C-2A	375	.128	L.F.	15.20	5.70		20.90	25.50
0435	30" wide, .066 C.Y. per L.F.		340	.141		16.70	6.25		22.95	28
0440	Steel forms, 24" wide, stroight		700	.069		6.80	3.04		9.84	12.10
0441	Rodus		500	.096		6.60	4.26		10.86	13.80
0442	30" wide, stroight		700	.069		7.95	3.04		10.99	13.35
0443	Rodus	▼	500	.096	▼	7.50	4.26		11.76	14.75
0445	Mochine formed, 24" wide, stroight	B-69A	2000	.024		5.55	.97	.45	6.97	8.05
0446	Rodus	▼	900	.053	▼	5.55	2.15	1	8.70	10.50
0447	30" wide, stroight		2000	.024		6.45	.97	.45	7.87	9.05
0448	Rodus	▼	900	.053	▼	6.45	2.15	1	9.60	11.50

32 16 13.23 Precast Concrete Curbs and Gutters

0010	PRECAST CONCRETE CURBS AND GUTTERS									
0550	Precast, 6" x 18", stroight	B-29	700	.080	L.F.	9.90	3.19	1.26	14.35	17.20
0600	6" x 18", rodus	"	325	.172	"	10.40	6.85	2.71	19.96	25

32 16 13.33 Asphalt Curbs

0010	ASPHALT CURBS									
0012	Curbs, ospholtic, mochine formed, 8" wide, 6" high, 40 L.F./ton	B-27	1000	.032	L.F.	1.74	1.19	.29	3.22	4.07
0100	8" wide, 8" high, 30 L.F. per ton	▼	900	.036	▼	2.33	1.32	.33	3.98	4.96
0150	Asphaltic berm, 12" W, 3"-6" H, 35 L.F./ton, before povement	▼	700	.046	▼	.04	1.70	.42	2.16	3.12
0200	12" W, 1-1/2" to 4" H, 60 L.F. per ton, loid with povement	B-2	1050	.038	▼	.02	1.41		1.43	2.21

32 16 Curbs, Gutters, Sidewalks, and Driveways

32 16 13 – Curbs and Gutters

32 16 13.43 Stone Curbs		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	STONE CURBS									
1000	Granite, split face, straight, 5" x 16"	D-13	275	.175	L.F.	12.30	7.65	1.75	21.70	27
1100	6" x 18"	"	250	.192		16.15	8.45	1.93	26.53	33
1300	Radius curbing, 6" x 18", over 10' radius	B-29	260	.215		19.80	8.60	3.39	31.79	39
1400	Corners, 2' radius	"	80	.700	Eo.	66.50	28	11	105.50	128
1600	Edging, 4-1/2" x 12", straight	d-13	300	.160	L.F.	6.15	7	1.60	14.75	19.20
1800	Curb inlets, (guttermouth) straight	B-29	41	1.366	Eo.	148	54.50	21.50	224	269
2000	Indion granite (belgian block)									
2100	Jumbo, 10-1/2" x 7-1/2" x 4", grey	D-1	150	.107	L.F.	6.05	4.41		10.46	13.35
2150	Pink		150	.107		8.20	4.41		12.61	15.70
2200	Regular, 9" x 4-1/2" x 4-1/2", grey		160	.100		4.53	4.13		8.66	11.30
2250	Pink		160	.100		5.80	4.13		9.93	12.65
2300	Cubes, 4" x 4" x 4", grey		175	.091		3.30	3.78		7.08	9.40
2350	Pink		175	.091		3.58	3.78		7.36	9.70
2400	6" x 6" x 6", pink		155	.103		11.85	4.26		16.11	19.50
2500	Alternate pricing method for indion granite									
2550	Jumbo, 10-1/2" x 7-1/2" x 4" (30 lb.), grey				Ton	345			345	380
2600	Pink					475			475	525
2650	Regular, 9" x 4-1/2" x 4-1/2" (20 lb.), grey					320			320	350
2700	Pink					405			405	445
2750	Cubes, 4" x 4" x 4" (5 lb.), grey					400			400	440
2800	Pink					460			460	505
2850	6" x 6" x 6" (25 lb.), pink					460			460	505
2900	For pollets, odd					22			22	24

32 17 Paving Specialties

32 17 13 – Parking Bumpers

32 17 13.13 Metal Parking Bumpers

0010	METAL PARKING BUMPERS									
0015	Bumper rails for garages, 12 Ga. rail, 6" wide, with steel									
0020	posts 12'-6" O.C., minimum	E-4	190	.168	L.F.	17.30	8.70	.75	26.75	35
0030	Average		165	.194		21.50	10	.86	32.36	42.50
0100	Maximum		140	.229		26	11.80	1.01	38.81	50.50
0300	12" channel rail, minimum		160	.200		21.50	10.30	.89	32.69	43
0400	Maximum		120	.267		32.50	13.75	1.18	47.43	61.50
1300	Pipe bollards, conc. filled/point, 8' L x 4' D hole, 6" diam.	B-6	20	1.200	Eo.	660	48	18.25	726.25	820
1400	8" diam.		15	1.600		890	64	24.50	978.50	1,100
1500	12" diam.		12	2		1,125	80	30.50	1,235.50	1,375
2030	Folding with individual padlocks	B-2	50	.800		600	29.50		629.50	705
8000	Parking lot control, see Section 11 12 13.10									
8900	Security ballards, SS, lighted, hyd., incl. controls, group of 3	L-7	.06	509	Ea.	48,400	22,500		70,900	87,500
8910	Group of 5	"	.04	682	"	65,000	30,200		95,200	118,000

32 17 13.16 Plastic Parking Bumpers

0010	PLASTIC PARKING BUMPERS									
1200	Thermoplastic, 6" x 10" x 6'-0"	B-2	120	.333	Ea.	52	12.35		64.35	76

32 17 13.19 Precast Concrete Parking Bumpers

0010	PRECAST CONCRETE PARKING BUMPERS									
1000	Wheel stops, precast concrete incl. dowels, 6" x 10" x 6'-0"	B-2	120	.333	Ea.	39.50	12.35		51.85	62
1100	8" x 13" x 6'-0"	"	120	.333	"	45.50	12.35		57.85	69

32 17 Paving Specialties

32 17 13 – Parking Bumpers

32 17 13.26 Wood Parking Bumpers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	WOOD PARKING BUMPERS									
0020	Parking barriers, timber w/saddles, treated type									
0100	4" x 4" for cars	B-2	520	.077	L.F.	2.79	2.85		5.64	7.45
0200	6" x 6" for trucks		520	.077	"	5.80	2.85		8.65	10.75
0600	Flexible fixed stanchion, 2' high, 3" diameter	▼	100	.400	Ea.	40	14.80		54.80	67

32 17 23 – Pavement Markings

32 17 23.13 Painted Pavement Markings

0010	PAINTED PAVEMENT MARKINGS									
0020	Acrylic waterbarne, white or yellow, 4" wide, less than 3000 L.F.	B-78	20000	.002	L.F.	.15	.09	.03	.27	.34
0200	6" wide, less than 3000 L.F.		11000	.004		.23	.16	.06	.45	.56
0500	8" wide, less than 3000 L.F.		10000	.005		.30	.18	.06	.54	.67
0600	12" wide, less than 3000 L.F.		4000	.012	▼	.45	.44	.16	1.05	1.36
0620	Arrows or gare lines		2300	.021	S.F.	.21	.77	.28	1.26	1.73
0640	Temparary paint, white or yellow, less than 3000 L.F.	▼	15000	.003	L.F.	.07	.12	.04	.23	.31
0660	Removal	1 Clab	300	.027			.98		.98	1.51
0680	Temporary tape	2 Clab	1500	.011		.47	.39		.86	1.12
0710	Thermoplastic, white or yellow, 4" wide, less than 6000 L.F.	B-79	15000	.003		.30	.10	.10	.50	.60
0730	6" wide, less than 6000 L.F.		14000	.003		.45	.11	.11	.67	.78
0740	8" wide, less than 6000 L.F.		12000	.003		.60	.12	.13	.85	.99
0750	12" wide, less than 6000 L.F.		6000	.007	▼	.89	.25	.26	1.40	1.64
0760	Arrows		660	.061	S.F.	.60	2.24	2.38	5.22	6.75
0770	Gare lines		2500	.016		.60	.59	.63	1.82	2.26
0780	Letters	▼	660	.061	▼	.60	2.24	2.38	5.22	6.75
1000	Airport painted markings									
0050	Traffic safety flashing truck for airport painting	A-2B	1	8	Day		292	270	562	740
1100	Painting, white or yellow, taxiway markings	B-78	4000	.012	S.F.	.26	.44	.16	.86	1.15
1110	with 12 lb. beads per 100 S.F.		4000	.012		.53	.44	.16	1.13	1.44
1200	Runway markings		3500	.014		.26	.51	.18	.95	1.27
1210	with 12 lb. beads per 100 S.F.		3500	.014		.53	.51	.18	1.22	1.56
1300	Pavement locatian or direction signs		2500	.019		.26	.71	.26	1.23	1.66
1310	with 12 lb. beads per 100 S.F.		2500	.019	▼	.53	.71	.26	1.50	1.95
1350	Mobilization airport pavement painting		4	12	Ea.		445	161	606	860
1400	Paint markings or pavement signs removal daytime	B-78B	400	.045	S.F.		1.70	.98	2.68	3.70
1500	Removal nighttime		335	.054	"		2.03	1.17	3.20	4.42
1600	Mobilization pavement paint removal	▼	4	4.500	Ea.		170	98	268	370

32 17 23.14 Pavement Parking Markings

0010	PAVEMENT PARKING MARKINGS									
0790	Layout of pavement marking	A-2	25000	.001	L.F.		.04	.01	.05	.06
0800	Lines on pvmt., parking stall, paint, white, 4" wide	B-78B	400	.045	Stall	4.62	1.70	.98	7.30	8.80
0825	Parking stall, small quantities	2 Pord	80	.200		9.25	7.90		17.15	22
0830	Lines an pvmt., parking stall, thermaplastic, white, 4" wide	B-79	300	.133	▼	13	4.94	5.25	23.19	27.50
1000	Street letters and numbers	B-78B	1600	.011	S.F.	.70	.43	.24	1.37	1.69

32 18 Athletic and Recreational Surfacing

32 18 13 – Synthetic Grass Surfacing

		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
32 18 13.10	Artificial Grass Surfacing									
0010	ARTIFICIAL GRASS SURFACING									
0015	Not including asphalt base or drainage,									
0020	but including cushion pad, over 50,000 S.F.									
0200	1/2" pile and 5/16" cushion pad, standard	C-17	3200	.025	S.F.	10.20	1.19		11.39	13.05
0300	Deluxe		2560	.031		15.10	1.49		16.59	18.90
0500	1/2" pile and 5/8" cushion pad, standard		2844	.028		14.70	1.34		16.04	18.30
0600	Deluxe	▼	2327	.034	▼	16.20	1.64		17.84	20.50
0800	For asphaltic concrete base, 2-1/2" thick,									
0900	with 6" crushed stone sub-base, add	B-25	12000	.007	S.F.	1.56	.29	.23	2.08	2.42

32 18 16 – Synthetic Resilient Surfacing

32 18 16.13 Playground Protective Surfacing

0010	PLAYGROUND PROTECTIVE SURFACING									
0100	Resilient rubber surface, poured in place, 4" thick, black	2 Skwk	300	.053	S.F.	11.15	2.52		13.67	16.15
0150	2" thick tapping, colors	"	2800	.006		6.05	.27		6.32	7.05
0200	Wood chip mulch, 6" deep	1 Clab	300	.027		.72	.98		1.70	2.30

32 18 23 – Athletic Surfacing

32 18 23.33 Running Track Surfacing

0010	RUNNING TRACK SURFACING									
0020	Running track, asphalt, incl base, 3" thick	B-37	300	.160	S.Y.	24	6.20	.53	30.73	36
0102	Surface, latex rubber system, 1/2" thick, black	B-20	115	.209		39	8.55		47.55	56
0152	Colors		115	.209		48	8.55		56.55	66
0302	Urethane rubber system, 1/2" thick, black		110	.218		29	8.90		37.90	45.50
0402	Color coating	▼	110	.218	▼	35.50	8.90		44.40	53

32 18 23.53 Tennis Court Surfacing

0010	TENNIS COURT SURFACING									
0020	Tennis court, asphalt, incl. base, 2-1/2" thick, one court	B-37	450	.107	S.Y.	37.50	4.13	.35	41.98	47.50
0200	Two courts		675	.071		15.25	2.75	.24	18.24	21
0300	Clay courts		360	.133		42	5.15	.44	47.59	55
0400	Pulverized natural greenstone with 4" base, fast dry		250	.192		39.50	7.45	.64	47.59	55.50
0800	Rubber-acrylic base resilient pavement	▼	600	.080		55.50	3.10	.26	58.86	66.50
1000	Colored sealer, acrylic emulsion, 3 coats	2 Clab	800	.020		6	.73		6.73	7.75
1100	3 coat, 2 colors	"	900	.018		8.45	.65		9.10	10.30
1200	For preparing old courts, add	1 Clab	825	.010			.36		.36	.55
1400	Paste for nets, 3-1/2" diameter with eye bolts	B-1	3.40	7.059	Pr.	300	263		563	735
1500	With pulley & reel		3.40	7.059	"	800	263		1,063	1,275
1700	Net, 42' long, nylon thread with binder		50	.480	Ea.	249	17.90		266.90	300
1800	All metal		6.50	3.692	"	495	138		633	760
2000	Paint markings on asphalt, 2 coats	1 Pard	1.78	4.494	Court	151	178		329	435
2200	Complete court with fence, etc., asphaltic conc., minimum	B-37	.20	240		28,400	9,300	795	38,495	46,400
2300	Maximum		.16	300		58,500	11,600	995	71,095	83,000
2800	Clay courts, minimum		.20	240		30,000	9,300	795	40,095	48,200
2900	Maximum		.16	300		55,000	11,600	995	67,595	79,500

32 31 Fences and Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.20 Fence, Chain Link Industrial		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	FENCE, CHAIN LINK INDUSTRIAL									
0011	Schedule 40, including concrete									
0020	3 strands borb wire, 2" past @ 10' O.C., set in concrete, 6' H									
0200	9 ga. wire, galv. steel, in concrete	B-80C	240	.100	L.F.	19.10	3.66	1.16	23.92	28
0248	Fence, odd for vinyl coated fobric				S.F.	.68			.68	.75
0300	Aluminized steel	B-80C	240	.100	L.F.	19.70	3.66	1.16	24.52	28.50
0500	6 ga. wire, galv. steel		240	.100		20.50	3.66	1.16	25.32	30
0600	Aluminized steel		240	.100		29.50	3.66	1.16	34.32	39.50
0800	6 ga. wire, 6' high but omit barbed wire, galv. steel		250	.096		19.40	3.51	1.11	24.02	28
0900	Aluminized steel, in concrete		250	.096		23.50	3.51	1.11	28.12	32.50
0920	8' H, 6 ga. wire, 2-1/2" line post, galv. steel, in concrete		180	.133		31	4.88	1.55	37.43	43
0940	Aluminized steel, in concrete		180	.133		37.50	4.88	1.55	43.93	50.50
1100	Add for corner pasts, 3" diam., galv. steel, in concrete		40	.600	Eq.	91.50	22	6.95	120.45	142
1200	Aluminized steel, in concrete		40	.600		91.50	22	6.95	120.45	142
1300	Add far broces, galv. steel		80	.300		38.50	11	3.48	52.98	63
1350	Aluminized steel		80	.300		50	11	3.48	64.48	75.50
1400	Gate for 6' high fence, 1-5/8" frame, 3' wide, galv. steel		10	2.400		191	88	28	307	375
1500	Aluminized steel, in concrete		10	2.400		191	88	28	307	375
2000	5'-0" high fence, 9 go., no borbed wire, 2" line past, in concrete									
2010	10' O.C., 1-5/8" top rail, in concrete									
2100	Golvonized steel, in concrete	B-80C	300	.080	L.F.	18.10	2.93	.93	21.96	25.50
2200	Aluminized steel, in concrete		300	.080	"	18.75	2.93	.93	22.61	26
2400	Gote, 4' wide, 5' high, 2" frame, galv. steel, in concrete		10	2.400	Eq.	176	88	28	292	360
2500	Aluminized steel, in concrete		10	2.400	"	192	88	28	308	380
3100	Overhead slide gate, chain link, 6' high, to 18' wide, in concrete		38	.632	L.F.	92.50	23	7.30	122.80	146
3110	Cantilever type, in concrete	B-80	48	.667		118	26.50	15.80	160.30	188
3120	8' high, in concrete		24	1.333		157	53	31.50	241.50	288
3130	10' high, in concrete		18	1.778		198	70.50	42	310.50	370
5000	Double swing gotes, incl. pasts & hardware, in concrete									
5010	5' high, 12' apening, in concrete	B-80C	3.40	7.059	Opng.	365	258	82	705	885
5020	20' apening, in concrete		2.80	8.571		485	315	99.50	899.50	1,125
5060	6' high, 12' apening, in concrete		3.20	7.500		435	275	87	797	990
5070	20' apening, in concrete		2.60	9.231		605	340	107	1,052	1,300
5080	8' high, 12' apening, in concrete	B-80	2.13	15.002		435	595	355	1,385	1,775
5090	20' apening, in concrete		1.45	22.069		655	875	525	2,055	2,650
5100	10' high, 12' apening, in concrete		1.31	24.427		770	970	580	2,320	2,950
5110	20' apening, in concrete		1.03	31.068		835	1,225	735	2,795	3,625
5120	12' high, 12' apening, in concrete		1.05	30.476		1,250	1,200	720	3,170	4,025
5130	20' apening, in concrete		.85	37.647		1,325	1,500	890	3,715	4,725
5190	Far oluminized steel add					20%				
7075	Fence, for smoll jobs 100 L.F. or less fence w/or wo gate, odd				S.F.	20%				

32 31 13.25 Fence, Chain Link Residential

0010	FENCE, CHAIN LINK RESIDENTIAL									
0011	Schedule 20, 11 ga. wire, 1-5/8" post									
0020	10' O.C., 1-3/8" top rail, 2" corner post, galv. stl. 3' high	B-80C	500	.048	L.F.	2	1.76	.56	4.32	5.50
0050	4' high		400	.060		7.05	2.20	.70	9.95	11.90
0100	6' high		200	.120		9.70	4.39	1.39	15.48	18.95
0150	Add far gote 3' wide, 1-3/8" frame, 3' high		12	2	Eq.	81	73	23	177	228
0170	4' high		10	2.400		87	88	28	203	261
0190	6' high		10	2.400		110	88	28	226	287
0200	Add for gote 4' wide, 1-3/8" frame, 3' high		9	2.667		88	97.50	31	216.50	281
0220	4' high		9	2.667		96	97.50	31	224.50	290

32 31 Fences and Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.25 Fence, Chain Link Residential		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0240	6' high	B-80C	8	3	Eo.	120	110	35	265	340
0350	Aluminized steel, 11 ga. wire, 3' high		500	.048	L.F.	8.05	1.76	.56	10.37	12.15
0380	4' high		400	.060		9	2.20	.70	11.90	14.05
0400	6' high		200	.120	▼	10.75	4.39	1.39	16.53	20
0450	Add for gate 3' wide, 1-3/8" frame, 3' high		12	2	Ea.	89	73	23	185	237
0470	4' high		10	2.400		97.50	88	28	213.50	273
0490	6' high		10	2.400		122	88	28	238	300
0500	Add for gate 4' wide, 1-3/8" frame, 3' high		10	2.400		98.50	88	28	214.50	274
0520	4' high		9	2.667		118	97.50	31	246.50	315
0540	6' high		8	3		131	110	35	276	350
0620	Vinyl covered, 9 ga. wire, 3' high		500	.048	L.F.	7.15	1.76	.56	9.47	11.15
0640	4' high		400	.060		8.15	2.20	.70	11.05	13.10
0660	6' high		200	.120	▼	10.05	4.39	1.39	15.83	19.35
0720	Add for gate 3' wide, 1-3/8" frame, 3' high		12	2	Eo.	89	73	23	185	237
0740	4' high		10	2.400		96	88	28	212	272
0760	6' high		10	2.400		120	88	28	236	298
0780	Add for gate 4' wide, 1-3/8" frame, 3' high		10	2.400		96.50	88	28	212.50	272
0800	4' high		9	2.667		101	97.50	31	229.50	295
0820	6' high	▼	8	3	▼	128	110	35	273	350
7076	Fence, for small jobs 100 L.F. fence or less w/or wo gate, odd				S.F.	20%				

32 31 13.26 Tennis Court Fences and Gates

0010 TENNIS COURT FENCES AND GATES										
0860	Tennis courts, 11 ga. wire, 2-1/2" post set									
0870	in concrete, 10' O.C., 1-5/8" top rail									
0900	10' high	B-80	190	.168	L.F.	21.50	6.70	3.99	32.19	38
0920	12' high		170	.188	"	22.50	7.50	4.46	34.46	41.50
1000	Add for gate 4' wide, 1-5/8" frame 7' high		10	3.200	Eo.	228	127	76	431	530
1040	Aluminized steel, 11 ga. wire 10' high		190	.168	L.F.	19.35	6.70	3.99	30.04	36
1100	12' high		170	.188	"	21.50	7.50	4.46	33.46	40
1140	Add for gate 4' wide, 1-5/8" frame, 7' high		10	3.200	Eo.	258	127	76	461	565
1250	Vinyl covered, 9 ga. wire, 10' high		190	.168	L.F.	19.80	6.70	3.99	30.49	36.50
1300	12' high		170	.188	"	23	7.50	4.46	34.96	42
1310	Fence, CL, tennis court, transom gate, single, galv., 4' x 7'	B-80A	8.72	2.752	Eo.	295	101	38	434	525
1400	Add for gate 4' wide, 1-5/8" frame, 7' high	B-80	10	3.200	"	310	127	76	513	620

32 31 13.33 Chain Link Backstops

0010 CHAIN LINK BACKSTOPS										
0015	Backstops, baseball, prefabricated, 30' wide, 12' high & 1 overhang	B-1	1	24	Eo.	2,550	895		3,445	4,175
0100	40' wide, 12' high & 2 overhangs	"	.75	32		6,825	1,200		8,025	9,350
0300	Basketball, steel, single goal	B-13	3.04	18.421		1,425	735	245	2,405	2,975
0400	Double goal	"	1.92	29.167	▼	1,950	1,175	390	3,515	4,350
0600	Tennis, wire mesh with pair of ends	B-1	2.48	9.677	Set	2,675	360		3,035	3,475
0700	Enclosed court	"	1.30	18.462	Eo.	9,225	690		9,915	11,200

32 31 13.53 High-Security Chain Link Fences, Gates and Sys.

0010 HIGH-SECURITY CHAIN LINK FENCES, GATES AND SYSTEMS										
0100	Fence, chain link, security, 7' H, standard FE-7, incl excavation & posts	B-80C	480	.050	L.F.	43	1.83	.58	45.41	51
0200	Fence, barbed wire, security, 7' high, with 3 wire barbed wire arm	"	400	.060	"	7.55	2.20	.70	10.45	12.50
0300	Complete systems, including material and installation									
0310	Tount wire fence detection system				M.L.F.				25,100	27,600
0410	Microwave fence detection system								41,300	45,400
0510	Passive magnetic fence detection system								19,500	21,400
0610	Infrared fence detection system								12,900	14,400
0710	Strain relief fence detection system								25,100	27,600

32 31 Fences and Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.53 High-Security Chain Link Fences, Gates and Sys.		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0810	Electro-shock fence detection system				M.L.F.				35,900	39,500
0910	Photo-electric fence detection system								16,300	18,000

32 31 19 – Decorative Metal Fences and Gates

32 31 19.10 Decorative Fence

0010	DECORATIVE FENCE									
5300	Tubular picket, steel, 6' sections, 1-9/16" posts, 4' high	B-80C	300	.080	L.F.	30.50	2.93	.93	34.36	39
5400	2" posts, 5' high		240	.100		34.50	3.66	1.16	39.32	45
5600	2" posts, 6' high		200	.120		41	4.39	1.39	46.78	54
5700	Stoggered picket 1-9/16" posts, 4' high		300	.080		30.50	2.93	.93	34.36	39
5800	2" posts, 5' high		240	.100		34.50	3.66	1.16	39.32	45
5900	2" posts, 6' high	▼	200	.120	▼	41	4.39	1.39	46.78	54
6200	Gates, 4' high, 3' wide	B-1	10	2.400	Eo.	274	89.50		363.50	440
6300	5' high, 3' wide		10	2.400		340	89.50		429.50	515
6400	6' high, 3' wide		10	2.400		390	89.50		479.50	570
6500	4' wide		10	2.400		415	89.50		504.50	595

32 31 26 – Wire Fences and Gates

32 31 26.10 Fences, Misc. Metal

0010	FENCES, MISC. METAL									
0012	Chicken wire, posts @ 4', 1" mesh, 4' high	B-80C	410	.059	L.F.	3.61	2.14	.68	6.43	8
0100	2" mesh, 6' high		350	.069		3.80	2.51	.79	7.10	8.90
0200	Golv. steel, 12 go., 2" x 4" mesh, posts 5' O.C., 3' high		300	.080		2.75	2.93	.93	6.61	8.55
0300	5' high		300	.080		3.35	2.93	.93	7.21	9.20
0400	14 go., 1" x 2" mesh, 3' high		300	.080		3.40	2.93	.93	7.26	9.25
0500	5' high	▼	300	.080	▼	4.55	2.93	.93	8.41	10.50
1000	Kennel fencing, 1-1/2" mesh, 6' long, 3'-6" wide, 6'-2" high	2 Clob	4	4	Eo.	500	147		647	775
1050	12' long		4	4		715	147		862	1,000
1200	Top covers, 1-1/2" mesh, 6' long		15	1.067		135	39		174	210
1250	12' long		12	1.333		190	49		239	285
1300	For kennel doors, see Section 08 31 13.40									
4500	Security fence, prison grade, set in concrete, 12' high	B-80	25	1.280	L.F.	61	51	30.50	142.50	179
4600	16' high	"	20	1.600	"	79	63.50	38	180.50	226

32 31 26.20 Wire Fencing, General

0010	WIRE FENCING, GENERAL									
0015	Borbed wire, galvanized, domestic steel, hi-tensile 15-1/2 go.				M.L.F.	91			91	100
0020	Stondord, 12-3/4 go.					103			103	113
0210	Borbless wire, 2-strand galvanized, 12-1/2 go.					103			103	113
0500	Helicol rozor ribbon, stoinless steel, 18" dio x 18" spocing				C.L.F.	168			168	185
0600	Hordware cloth golv., 1/4" mesh, 23 go., 2' wide				C.S.F.	65			65	71.50
0700	3' wide					48			48	53
0900	1/2" mesh, 19 go., 2' wide					37.50			37.50	41
1000	4' wide					23.50			23.50	26
1200	Choin link fobric, steel, 2" mesh, 6 ga., galvanized					247			247	271
1300	9 go., galvanized					86.50			86.50	95.50
1350	Vinyl cooted					88.50			88.50	97
1360	Aluminized					80			80	88
1400	2-1/4" mesh, 11.5 go., galvanized					54			54	59.50
1600	1-3/4" mesh (tennis courts), 11.5 go. (core), vinyl cooted					54			54	59.50
1700	9 go., galvanized					84			84	92.50
2100	Welded wire fobric, galvanized, 1" x 2", 14 go.					60			60	66
2200	2" x 4", 12-1/2 go.					60			60	66

32 31 Fences and Gates

32 31 29 – Wood Fences and Gates

32 31 29.20 Fence, Wood Rail		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	FENCE, WOOD RAIL									
0012	Picket, No. 2 cedar, Gothic, 2 rail, 3' high	B-1	160	.150	L.F.	7.55	5.60		13.15	16.95
0050	Gate, 3'-6" wide	B-80C	9	2.667	Ea.	76.50	97.50	31	205	268
0400	3 rail, 4' high		150	.160	L.F.	8.45	5.85	1.85	16.15	20.50
0500	Gate, 3'-6" wide		9	2.667	Ea.	94.50	97.50	31	223	288
0600	Open rail, rustic, No. 1 cedar, 2 rail, 3' high		160	.150	L.F.	5.85	5.50	1.74	13.09	16.80
0650	Gate, 3' wide		9	2.667	Ea.	80	97.50	31	208.50	272
0700	3 rail, 4' high		150	.160	L.F.	7	5.85	1.85	14.70	18.75
0900	Gate, 3' wide		9	2.667	Ea.	100	97.50	31	228.50	294
1200	Stockade, No. 2 cedar, treated wood rails, 6' high		160	.150	L.F.	8.80	5.50	1.74	16.04	20
1250	Gate, 3' wide		9	2.667	Ea.	95	97.50	31	223.50	289
1300	No. 1 cedar, 3-1/4" cedar rails, 6' high		160	.150	L.F.	19.85	5.50	1.74	27.09	32.50
1500	Gate, 3' wide		9	2.667	Ea.	215	97.50	31	343.50	420
1520	Open rail, split, No. 1 cedar, 2 rail, 3' high		160	.150	L.F.	5.90	5.50	1.74	13.14	16.85
1540	3 rail, 4'-0" high		150	.160		7.75	5.85	1.85	15.45	19.60
3300	Board, shadow box, 1" x 6", treated pine, 6' high		160	.150		12.40	5.50	1.74	19.64	24
3400	No. 1 cedar, 6' high		150	.160		24.50	5.85	1.85	32.20	38
3900	Basket weave, No. 1 cedar, 6' high		160	.150		33.50	5.50	1.74	40.74	47.50
3950	Gate, 3'-6" wide	B-1	8	3	Ea.	220	112		332	415
4000	Treated pine, 6' high		150	.160	L.F.	15.80	5.95		21.75	26.50
4200	Gate, 3'-6" wide		9	2.667	Ea.	160	99.50		259.50	330
5000	Fence rail, redwood, 2" x 4", merch. grade 8'		2400	.010	L.F.	2.39	.37		2.76	3.21
5050	Select grade, 8'		2400	.010	"	5.25	.37		5.62	6.40
6000	Fence post, select redwood, earthpacked & treated, 4" x 4" x 6'		96	.250	Ea.	13.50	9.35		22.85	29.50
6010	4" x 4" x 8'		96	.250		18.50	9.35		27.85	35
6020	Set in concrete, 4" x 4" x 6'		50	.480		21	17.90		38.90	50.50
6030	4" x 4" x 8'		50	.480		22	17.90		39.90	51.50
6040	Wood post, 4' high, set in concrete, incl. concrete		50	.480		13.50	17.90		31.40	42.50
6050	Earth packed		96	.250		16.50	9.35		25.85	32.50
6060	6' high, set in concrete, incl. concrete		50	.480		17	17.90		34.90	46
6070	Earth packed		96	.250		12.90	9.35		22.25	28.50

32 32 Retaining Walls

32 32 13 – Cast-in-Place Concrete Retaining Walls

32 32 13.10 Retaining Walls, Cast Concrete

0010	RETAINING WALLS, CAST CONCRETE									
1800	Concrete gravity wall with vertical face including excavation & backfill									
1850	No reinforcing									
1900	6' high, level embankment	C-17C	36	2.306	L.F.	71.50	110	17.20	198.70	269
2000	33° slope embankment		32	2.594		84	124	19.35	227.35	305
2200	8' high, no surcharge		27	3.074		90	147	23	260	350
2300	33° slope embankment		24	3.458		109	165	26	300	405
2500	10' high, level embankment		19	4.368		129	209	32.50	370.50	505
2600	33° slope embankment		18	4.611		178	220	34.50	432.50	575
2800	Reinforced concrete cantilever, incl. excavation, backfill & reinf.									
2900	6' high, 33° slope embankment	C-17C	35	2.371	L.F.	66	113	17.70	196.70	267
3000	8' high, 33° slope embankment		29	2.862		76	137	21.50	234.50	320
3100	10' high, 33° slope embankment		20	4.150		99	198	31	328	450
3200	20' high, 500 lb. per L.F. surcharge		7.50	11.067		297	530	82.50	909.50	1,225
3500	Concrete cribbing, incl. excavation and backfill									

32 32 Retaining Walls

32 32 13 – Cast-in-Place Concrete Retaining Walls

32 32 13.10 Retaining Walls, Cast Concrete		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3700	12' high, open face	B-13	210	.267	S.F.	33	10.65	3.55	47.20	56.50
3900	Closed face	"	210	.267	"	31	10.65	3.55	45.20	54
4100	Concrete filled slurry trench, see Section 31 56 23.20									

32 32 23 – Segmental Retaining Walls

32 32 23.13 Segmental Conc. Unit Masonry Retaining Walls

0010 SEGMENTAL CONC. UNIT MASONRY RETAINING WALLS										
7100	Segmental Retaining Wall system, incl. pins, and void fill									
7120	base not included									
7140	Large unit, 8" high x 18" wide x 20" deep, 3 plane split	B-62	300	.080	S.F.	13.60	3.21	.58	17.39	20.50
7150	Straight split		300	.080		13.50	3.21	.58	17.29	20.50
7160	Medium, lt. wt., 8" high x 18" wide x 12" deep, 3 plane split		400	.060		10.45	2.41	.44	13.30	15.65
7170	Straight split		400	.060		9.85	2.41	.44	12.70	15
7180	Small unit, 4" x 18" x 10" deep, 3 plane split		400	.060		13.35	2.41	.44	16.20	18.80
7190	Straight split		400	.060		13	2.41	.44	15.85	18.45
7200	Cop unit, 3 plane split		300	.080		13.60	3.21	.58	17.39	20.50
7210	Cop unit, straight split		300	.080		13.60	3.21	.58	17.39	20.50
7250	Geo-grid soil reinforcement 4' x 50'	2 Clob	22500	.001		.70	.03		.73	.81
7255	Geo-grid soil reinforcement 6' x 150'	"	22500	.001	▼	.56	.03		.59	.66
8000	For higher walls, add components as necessary									

32 32 26 – Metal Crib Retaining Walls

32 32 26.10 Metal Bin Retaining Walls

0010 METAL BIN RETAINING WALLS										
0011	Aluminized steel bin, excavation									
0020	and backfill not included, 10' wide									
0100	4' high, 5.5' deep	B-13	650	.086	S.F.	27.50	3.43	1.15	32.08	36.50
0200	8' high, 5.5' deep		615	.091		31.50	3.63	1.21	36.34	41.50
0300	10' high, 7.7' deep		580	.097		34.50	3.85	1.29	39.64	45.50
0400	12' high, 7.7' deep		530	.106		37.50	4.21	1.41	43.12	49
0500	16' high, 7.7' deep		515	.109		39.50	4.33	1.45	45.28	51.50
0600	16' high, 9.9' deep		500	.112		42.50	4.46	1.49	48.45	55.50
0700	20' high, 9.9' deep		470	.119		48	4.75	1.59	54.34	62
0800	20' high, 12.1' deep		460	.122		43.50	4.85	1.62	49.97	56.50
0900	24' high, 12.1' deep		455	.123		46	4.91	1.64	52.55	60.50
1000	24' high, 14.3' deep		450	.124		54	4.96	1.66	60.62	68.50
1100	28' high, 14.3' deep	▼	440	.127	▼	56	5.05	1.70	62.75	71
1300	For plain galvanized bin type walls, deduct					10%				

32 32 29 – Timber Retaining Walls

32 32 29.10 Landscape Timber Retaining Walls

0010 LANDSCAPE TIMBER RETAINING WALLS										
0100	Treated timbers, 6" x 6"	1 Clob	265	.030	L.F.	2	1.11		3.11	3.91
0110	6" x 8"	"	200	.040	"	2.62	1.47		4.09	5.15
0120	Drilling holes in timbers for fastening, 1 1/2"	1 Corp	450	.018	Inch		.82		.82	1.26
0130	5/8"	"	450	.018	"		.82		.82	1.26
0140	Reinforcing rods for fastening, 1 1/2"	1 Clob	312	.026	L.F.	.37	.94		1.31	1.85
0150	5/8"	"	312	.026	"	.57	.94		1.51	2.08
0160	Reinforcing fabric	2 Clob	2500	.006	S.Y.	1.88	.23		2.11	2.43
0170	Gravel backfill		28	.571	C.Y.	19.90	21		40.90	54.50
0180	Perforated pipe, 4" diameter with silt sock		1200	.013	L.F.	1.29	.49		1.78	2.17
0190	Galvanized 60d common nails	1 Clob	625	.013	Eo.	.16	.47		.63	.90
0200	20d common nails	"	3800	.002	"	.04	.08		.12	.16

32 32 Retaining Walls

32 32 36 – Gabion Retaining Walls

32 32 36.10 Stone Gabion Retaining Walls				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	STONE GABION RETAINING WALLS											
4300	Stone filled gabions, nat incl. excavation,											
4310	Stone, delivered, 3' wide											
4350	Galvanized, 6' high, 33° slope embankment			B-13	49	1.143	L.F.	42	45.50	15.20	102.70	133
4500	Highway surcharge				27	2.074		84	82.50	27.50	194	250
4600	9' high, up to 33° slope embankment				24	2.333		94.50	93	31	218.50	281
4700	Highway surcharge				16	3.500		147	140	46.50	333.50	430
4900	12' high, up to 33° slope embankment				14	4		147	159	53.50	359.50	465
5000	Highway surcharge				11	5.091		210	203	68	481	615
5950	Far PVC coating, add							12%				

32 32 60 – Stone Retaining Walls

32 32 60.10 Retaining Walls, Stone

0010	RETAINING WALLS, STONE											
0015	Including excavation, concrete footing and											
0020	stone 3' below grade. Price is exposed face area.											
0200	Decorative random stone, to 6' high, 1'-6" thick, dry set			D-1	35	.457	S.F.	30.50	18.90		49.40	62.50
0300	Mortar set				40	.400		33.50	16.50		50	62
0500	Cut stone, to 6' high, 1'-6" thick, dry set				35	.457		31.50	18.90		50.40	64
0600	Mortar set				40	.400		32.50	16.50		49	61
0800	Random stone, 6' to 10' high, 2' thick, dry set				45	.356		41	14.70		55.70	67.50
0900	Mortar set				50	.320		42	13.20		55.20	66
1100	Cut stone, 6' to 10' high, 2' thick, dry set				45	.356		40	14.70		54.70	66.50
1200	Mortar set				50	.320		42	13.20		55.20	66

32 34 Fabricated Bridges

32 34 20 – Fabricated Pedestrian Bridges

32 34 20.10 Bridges, Pedestrian

0010	BRIDGES, PEDESTRIAN											
0011	Spans over streams, roadways, etc.											
0020	including erection, not including foundations											
0050	Precast concrete, complete in place, 8' wide, 60' span			E-2	215	.260	S.F.	114	13.05	7.10	134.15	155
0100	100' span				185	.303		125	15.20	8.25	148.45	172
0150	120' span				160	.350		136	17.55	9.55	163.10	190
0200	150' span				145	.386		141	19.40	10.55	170.95	200
0300	Steel, trussed or arch spans, compl. in place, 8' wide, 40' span				320	.175		115	8.80	4.78	128.58	147
0400	50' span				395	.142		103	7.10	3.87	113.97	129
0500	60' span				465	.120		103	6.05	3.29	112.34	127
0600	80' span				570	.098		123	4.93	2.68	130.61	146
0700	100' span				465	.120		173	6.05	3.29	182.34	204
0800	120' span				365	.153		218	7.70	4.19	229.89	258
0900	150' span				310	.181		232	9.05	4.93	245.98	276
1000	160' span				255	.220		232	11	6	249	280
1100	10' wide, 80' span				640	.088		123	4.39	2.39	129.78	145
1200	120' span				415	.135		159	6.75	3.68	169.43	191
1300	150' span				445	.126		178	6.30	3.44	187.74	211
1400	200' span				205	.273		190	13.70	7.45	211.15	241
1600	Wood, laminated type, complete in place, 80' span			C-12	203	.236		85	10.75	3.27	99.02	114
1700	130' span			"	153	.314		88.50	14.25	4.33	107.08	124

32 35 Screening Devices

32 35 16 – Sound Barriers

32 35 16.10 Traffic Barriers, Highway Sound Barriers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	TRAFFIC BARRIERS, HIGHWAY SOUND BARRIERS									
0020	Highway sound barriers, not including footing									
0100	Precast concrete, concrete columns @ 30' OC, 8" T, 8' H	C-12	400	.120	L.F.	130	5.45	1.66	137.11	153
0110	12' H		265	.181		195	8.20	2.50	205.70	230
0120	16' H		200	.240		260	10.90	3.31	274.21	305
0130	20' H		160	.300		325	13.60	4.14	342.74	385
0400	Lt. Wt. composite panel, cementitious face, St. posts @ 12' OC, 8' H	B-80B	190	.168		154	6.60	1.31	161.91	181
0410	12' H		125	.256		231	10.05	1.99	243.04	272
0420	16' H		95	.337		310	13.20	2.61	325.81	365
0430	20' H		75	.427		385	16.75	3.31	405.06	455

32 84 Planting Irrigation

32 84 23 – Underground Sprinklers

32 84 23.10 Sprinkler Irrigation System

0010	SPRINKLER IRRIGATION SYSTEM									
0011	For lawns									
0100	Golf course with fully automatic system	C-17	.05	1600	9 holes	100,000	76,500		176,500	228,000
0200	24' diam. head at 15' O.C. incl. piping, auto oper., minimum	B-20	70	.343	Head	23.50	14		37.50	47
0300	Maximum		40	.600		56	24.50		80.50	99.50
0500	60' diam. head at 40' O.C. incl. piping, auto oper., minimum		28	.857		70.50	35		105.50	132
0600	Maximum		23	1.043		190	42.50		232.50	275
0800	Residential system, custom, 1" supply		2000	.012	S.F.	.26	.49		.75	1.05
0900	1-1/2" supply		1800	.013	"	.49	.54		1.03	1.38
1020	Pap up spray head w/risers, hi-pap, full circle pattern, 4"	2 Skwk	76	.211	Ea.	4.48	9.95		14.43	20.50
1030	1/2 circle pattern, 4"		76	.211		4.48	9.95		14.43	20.50
1040	6", full circle pattern		76	.211		9.85	9.95		19.80	26.50
1050	1/2 circle pattern, 6"		76	.211		8.50	9.95		18.45	25
1060	12", full circle pattern		76	.211		11.60	9.95		21.55	28
1070	1/2 circle pattern, 12"		76	.211		11.50	9.95		21.45	28
1080	Pap up bubbler head w/risers, hi-pap bubbler head, 4"		76	.211		4.35	9.95		14.30	20
1090	6"		76	.211		9.10	9.95		19.05	25.50
1100	12"		76	.211		10.90	9.95		20.85	27.50
1110	Impact full/part circle sprinklers, 28'-54' 25-60 PSI		37	.432		19.60	20.50		40.10	53
1120	Spaced 37'-49' @ 25-50 PSI		37	.432		27.50	20.50		48	62
1130	Spaced 43'-61' @ 30-60 PSI		37	.432		77	20.50		97.50	116
1140	Spaced 54'-78' @ 40-80 PSI		37	.432		133	20.50		153.50	178
1145	Impact rotor pop-up full/part commercial circle sprinklers									
1150	Spaced 42'-65' 35-80 PSI	2 Skwk	25	.640	Ea.	17	30.50		47.50	65.50
1160	Spaced 48'-76' 45-85 PSI	"	25	.640	"	18.70	30.50		49.20	67.50
1165	Impact rotor pop-up part. circle comm., 53'-75', 55-100 PSI, w/accessories									
1170	Plastic case, metal cover	2 Skwk	25	.640	Ea.	82	30.50		112.50	137
1180	Rubber cover		25	.640		63	30.50		93.50	117
1190	Iron case, metal cover		22	.727		135	34.50		169.50	203
1200	Rubber cover		22	.727		143	34.50		177.50	211
1250	Plastic case, 2 nozzle, metal cover		25	.640		128	30.50		158.50	187
1260	Rubber cover		25	.640		131	30.50		161.50	191
1270	Iron case, 2 nozzle, metal cover		22	.727		185	34.50		219.50	258
1280	Rubber cover		22	.727		185	34.50		219.50	258
1282	Impact rotor pop-up full circle commercial, 39'-99', 30-100 PSI									
1284	Plastic case, metal cover	2 Skwk	25	.640	Ea.	138	30.50		168.50	199
1286	Rubber cover		25	.640		158	30.50		188.50	220

32 84 Planting Irrigation

32 84 23 – Underground Sprinklers

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
32 84 23.10 Sprinkler Irrigation System										
1288	Iron cose, metal cover	2 Skwk	22	.727	Eo.	203	34.50		237.50	277
1290	Rubber cover		22	.727		210	34.50		244.50	285
1292	Plastic cose, 2 nozzle, metal cover		22	.727		150	34.50		184.50	219
1294	Rubber cover		22	.727		150	34.50		184.50	219
1296	Iron cose, 2 nozzle, metal cover		20	.800		198	38		236	276
1298	Rubber cover		20	.800		205	38		243	285
1305	Electric remote control valve, plastic, 3/4"		18	.889		17.30	42		59.30	84
1310	1"		18	.889		33	42		75	102
1320	1-1/2"		18	.889		60.50	42		102.50	132
1330	2"	▼	18	.889	▼	86	42		128	160
1335	Quick coupling valves, brass, locking cover									
1340	Inlet coupling valve, 3/4"	2 Skwk	18.75	.853	Eo.	22	40.50		62.50	86.50
1350	1"		18.75	.853		30.50	40.50		71	96.50
1360	Controller valve boxes, 6" round boxes		18.75	.853		7	40.50		47.50	70
1370	10" round boxes		14.25	1.123		11.30	53		64.30	95
1380	12" square box	▼	9.75	1.641	▼	15.90	77.50		93.40	137
1388	Electromech. control, 14 day 3-60 min., auto start to 23/day									
1390	4 station	2 Skwk	1.04	15.385	Eo.	185	730		915	1,325
1400	7 station		.64	25		201	1,175		1,376	2,050
1410	12 station		.40	40		220	1,900		2,120	3,175
1420	Dual programs, 18 station		.24	66.667		610	3,150		3,760	5,550
1430	23 station	▼	.16	100	▼	690	4,725		5,415	8,075
1435	Backflow preventer, bronze, 0-175 PSI, w/valves, test cocks									
1440	3/4"	2 Skwk	2	8	Eo.	103	380		483	700
1450	1"		2	8		118	380		498	715
1460	1-1/2"		2	8		280	380		660	895
1470	2"	▼	2	8	▼	345	380		725	965
1475	Pressure vacuum breaker, brass, 15-150 PSI									
1480	3/4"	2 Skwk	2	8	Eo.	60.50	380		440.50	650
1490	1"		2	8		65.50	380		445.50	655
1500	1-1/2"		2	8		270	380		650	880
1510	2"	▼	2	8	▼	325	380		705	945

32 91 Planting Preparation

32 91 13 – Soil Preparation

32 91 13.16 Mulching

0010	MULCHING									
0100	Aged barks, 3" deep, hand spread	1 Clab	100	.080	S.Y.	3.38	2.93		6.31	8.25
0150	Skid steer loader	B-63	13.50	2.963	M.S.F.	375	115	12.90	502.90	605
0200	Hoy, 1" deep, hand spread	1 Clab	475	.017	S.Y.	.48	.62		1.10	1.48
0250	Power mulcher, small	B-64	180	.089	M.S.F.	53.50	3.25	2.39	59.14	66
0350	Large	B-65	530	.030	"	53.50	1.10	1.12	55.72	61.50
0400	Humus peat, 1" deep, hand spread	1 Clab	700	.011	S.Y.	2.56	.42		2.98	3.47
0450	Push spreader	"	2500	.003	"	2.56	.12		2.68	3
0550	Troctar spreader	B-66	700	.011	M.S.F.	284	.54	.37	284.91	315
0600	Oot straw, 1" deep, hand spread	1 Clab	475	.017	S.Y.	.55	.62		1.17	1.56
0650	Power mulcher, small	B-64	180	.089	M.S.F.	61	3.25	2.39	66.64	74.50
0700	Large	B-65	530	.030	"	61	1.10	1.12	63.22	70
0750	Add far asphaltic emulsion	B-45	1770	.009	Gol.	5.75	.39	.52	6.66	7.50
0800	Peot moss, 1" deep, hand spread	1 Clab	900	.009	S.Y.	2.63	.33		2.96	3.39
0850	Push spreader	"	2500	.003	"	2.63	.12		2.75	3.07

32 91 Planting Preparation

32 91 13 – Soil Preparation

32 91 13.16 Mulching		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0950	Tractor spreader	B-66	700	.011	M.S.F.	292	.54	.37	292.91	320
1000	Polyethylene film, 6 mil	2 Clab	2000	.008	S.Y.	.44	.29		.73	.93
1100	Redwood nuggets, 3" deep, hand spread	1 Clab	150	.053	"	2.77	1.95		4.72	6.05
1150	Skid steer loader	B-63	13.50	2.963	M.S.F.	310	115	12.90	437.90	530
1200	Stone mulch, hand spread, ceramic chips, economy	1 Clab	125	.064	S.Y.	6.85	2.35		9.20	11.15
1250	Deluxe	"	95	.084	"	10.50	3.09		13.59	16.30
1300	Gronite chips	B-1	10	2.400	C.Y.	69.50	89.50		159	215
1400	Marble chips		10	2.400		152	89.50		241.50	305
1600	Peo gravel		28	.857		75.50	32		107.50	133
1700	Quartz		10	2.400		188	89.50		277.50	345
1800	Tor paper, 15 lb. felt	1 Clab	800	.010	S.Y.	.49	.37		.86	1.10
1900	Wood chips, 2" deep, hand spread	"	220	.036	"	1.45	1.33		2.78	3.66
1950	Skid steer loader	B-63	20.30	1.970	M.S.F.	161	76.50	8.60	246.10	305

32 91 13.26 Planting Beds

0010	PLANTING BEDS									
0100	Backfill planting pit, by hand, on site topsoil	2 Clab	18	.889	C.Y.		32.50		32.50	50.50
0200	Prepared planting mix, by hand	"	24	.667			24.50		24.50	37.50
0300	Skid steer loader, on site topsoil	B-62	340	.071			2.83	.51	3.34	4.90
0400	Prepared planting mix	"	410	.059			2.35	.43	2.78	4.07
1000	Excavate planting pit, by hand, sandy soil	2 Clab	16	1			36.50		36.50	56.50
1100	Heavy soil or clay	"	8	2			73.50		73.50	113
1200	1/2 C.Y. backhoe, sandy soil	B-11C	150	.107			4.56	2.44	7	9.65
1300	Heavy soil or clay	"	115	.139			5.95	3.18	9.13	12.60
2000	Mix planting soil, incl. loam, manure, peat, by hand	2 Clab	60	.267		43	9.75		52.75	62.50
2100	Skid steer loader	B-62	150	.160		43	6.40	1.16	50.56	58.50
3000	Pile sod, skid steer loader	"	2800	.009	S.Y.		.34	.06	.40	.60
3100	By hand	2 Clab	400	.040			1.47		1.47	2.26
4000	Remove sod, F.E. loader	B-10S	2000	.006			.27	.19	.46	.62
4100	Sod cutter	B-12K	3200	.005			.22	.31	.53	.68
4200	By hand	2 Clab	240	.067			2.44		2.44	3.77

32 91 19 – Landscape Grading

32 91 19.13 Topsoil Placement and Grading

0010	TOPSOIL PLACEMENT AND GRADING									
0400	Spread from pile to rough finish grade, F.E. loader, 1.5 C.Y.	B-10S	200	.060	C.Y.		2.69	1.87	4.56	6.15
0500	Up to 200' radius, by hand	1 Clab	14	.571			21		21	32.50
0600	Top dress by hand, 1 C.Y. for 600 S.F.	"	11.50	.696		28	25.50		53.50	70
0700	Furnish and place, truck dumped, screened, 4" deep	B-10S	1300	.009	S.Y.	3.49	.41	.29	4.19	4.79
0800	6" deep	"	820	.015	"	4.46	.66	.46	5.58	6.40

32 92 Turf and Grasses

32 92 19 – Seeding

32 92 19.13 Mechanical Seeding

0010	MECHANICAL SEEDING									
0020	Mechanical seeding, 215 lb./acre	B-66	1.50	5.333	Acre	650	251	173	1,074	1,275
0100	44 lb./M.S.Y.	"	2500	.003	S.Y.	.18	.15	.10	.43	.54
0101	\$2.00/lb., 44 lb./M.S.Y.	1 Clab	13950	.001	S.F.	.02	.02		.04	.05
0300	Fine grading and seeding incl. lime, fertilizer & seed, with equipment	B-14	1000	.048	S.Y.	.44	1.86	.37	2.67	3.74
0400	Fertilizer hand push spreader, 35 lb. per M.S.F.	1 Clab	200	.040	M.S.F.	14.95	1.47		16.42	18.65
0600	Limestone hand push spreader, 50 lb. per M.S.F.		180	.044		5.70	1.63		7.33	8.75

32 92 Turf and Grasses

32 92 19 – Seeding

		Crew	Doily Output	Labor-Hours	Unit	Material	2014 Bore Costs		Total	Total Incl O&P
							Labor	Equipment		
32 92 19.13	Mechanical Seeding									
0800	Gross seed hand push spreader, 4.5 lb. per M.S.F.	1 Clob	180	.044	M.S.F.	20	1.63		21.63	24.50
1000	Hydro or air seeding for large areas, incl. seed and fertilizer	B-81	8900	.003	S.Y.	.43	.11	.08	.62	.73
1100	With wood fiber mulch added	"	8900	.003	"	1.76	.11	.08	1.95	2.20
1300	Seed only, over 100 lb., field seed, minimum				Lb.	.75			.75	.83
1400	Maximum					4.30			4.30	4.73
1500	Lawn seed, minimum					1.25			1.25	1.38
1600	Maximum					2.45			2.45	2.70
1800	Aerial operations, seeding only, field seed	B-58	50	.480	Acre	244	19.25	62	325.25	365
1900	Lawn seed		50	.480		405	19.25	62	486.25	545
2100	Seed and liquid fertilizer, field seed		50	.480		735	19.25	62	816.25	905
2200	Lawn seed		50	.480		895	19.25	62	976.25	1,075

32 92 23 – Sodding

32 92 23.10 Sodding Systems

0010	SODDING SYSTEMS									
0020	Sodding, 1" deep, bluegrass sod, on level ground, over 8 M.S.F.	B-63	22	1.818	M.S.F.	250	70.50	7.95	328.45	390
0200	4 M.S.F.		17	2.353		265	91	10.25	366.25	445
0300	1000 S.F.		13.50	2.963		290	115	12.90	417.90	510
0500	Sloped ground, over 8 M.S.F.		6	6.667		250	258	29	537	700
0600	4 M.S.F.		5	8		265	310	35	610	805
0700	1000 S.F.		4	10		290	385	43.50	718.50	965
1000	Bent grass sod, on level ground, over 6 M.S.F.		20	2		253	77.50	8.70	339.20	410
1100	3 M.S.F.		18	2.222		265	86	9.70	360.70	435
1200	Sodding 1000 S.F. or less		14	2.857		293	111	12.45	416.45	510
1500	Sloped ground, over 6 M.S.F.		15	2.667		253	103	11.65	367.65	450
1600	3 M.S.F.		13.50	2.963		265	115	12.90	392.90	480
1700	1000 S.F.		12	3.333		293	129	14.55	436.55	540

32 93 Plants

32 93 10 – General Planting Costs

32 93 10.12 Travel

0010	TRAVEL add to all nursery items									
0015	10 to 20 miles one way, add				All				5%	5%
0100	30 to 50 miles one way, add				"				10%	10%

32 93 13 – Ground Covers

32 93 13.10 Ground Cover Plants

0010	GROUND COVER PLANTS									
0012	Plants, pachysandra, in prepared beds	B-1	15	1.600	C	79.50	59.50		139	179
0200	Vinco minor, 1 yr., bare root, in prepared beds		12	2	"	64.50	74.50		139	186
0600	Stone chips, in 50 lb. bags, Georgia marble		520	.046	Bog	4.13	1.72		5.85	7.20
0700	Onyx gemstone		260	.092		16.50	3.45		19.95	23.50
0800	Quartz		260	.092		6.15	3.45		9.60	12.05
0900	Pea gravel, truckload lots		28	.857	Ton	24	32		56	75.50

32 93 33 – Shrubs

32 93 33.10 Shrubs and Trees

0010	SHRUBS AND TREES									
0011	Evergreen, in prepared beds, B & B									
0100	Arborvitae pyramidol, 4'-5'	B-17	30	1.067	Ea.	110	42	26	178	214
0150	Globe, 12"-15"	B-1	96	.250		21.50	9.35		30.85	38
0300	Cedar, blue, 8'-10'	B-17	18	1.778		230	70	43.50	343.50	405

32 93 Plants

32 93 33 – Shrubs

32 93 33.10 Shrubs and Trees

		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0500	Hemlock, Canadian, 2'-1/2'-3'	B-1	36	.667	Ea.	30.50	25		55.50	72
0550	Holly, Savannah, 8' - 10' H		9.68	2.479		258	92.50		350.50	425
0600	Juniper, andorra, 18"-24"		80	.300		36	11.20		47.20	57
0620	Wiltani, 15"-18"		80	.300		28.50	11.20		39.70	49
0640	Skyrocket, 4'-1/2'-5'	B-17	55	.582		117	23	14.25	154.25	180
0660	Blue pfitzer, 2'-2-1/2'	B-1	44	.545		42.50	20.50		63	78
0680	Ketleerie, 2'-1/2'-3'		50	.480		51	17.90		68.90	83.50
0700	Pine, black, 2'-1/2'-3'		50	.480		59.50	17.90		77.40	93
0720	Muga, 18"-24"		60	.400		59	14.95		73.95	88
0740	White, 4'-5'	B-17	75	.427		51	16.85	10.45	78.30	93.50
0800	Spruce, blue, 18"-24"	B-1	60	.400		66.50	14.95		81.45	96
0840	Narway, 4'-5'	B-17	75	.427		82	16.85	10.45	109.30	128
0900	Yew, denisforma, 12"-15"	B-1	60	.400		36	14.95		50.95	62.50
1000	Capitata, 18"-24"		30	.800		32.50	30		62.50	82
1100	Hicksi, 2'-2-1/2'		30	.800		86.50	30		116.50	141

32 93 33.20 Shrubs

0010	SHRUBS									
0011	Broadleaf Evergreen, planted in prepared beds									
0100	Andromeda, 15"-18", container	B-1	96	.250	Ea.	33	9.35		42.35	51
0200	Azalea, 15" - 18", container		96	.250		28.50	9.35		37.85	46
0300	Barberry, 9"-12", container		130	.185		17.55	6.90		24.45	30
0400	Baxwood, 15"-18", B&B		96	.250		42	9.35		51.35	60.50
0500	Euonymus, emerald gaiety, 12" to 15", container		115	.209		23	7.80		30.80	37.50
0600	Holly, 15"-18", B & B		96	.250		35.50	9.35		44.85	54
0900	Maunt laurel, 18" - 24", B & B		80	.300		70	11.20		81.20	94.50
1000	Paxistema, 9 - 12" high		130	.185		22	6.90		28.90	34.50
1100	Rhododendron, 18"-24", container		48	.500		38	18.65		56.65	71
1200	Rosemary, 1 gal. container		600	.040		18	1.49		19.49	22
2000	Deciduous, planted in prepared beds, amelanchier, 2'-3', B & B		57	.421		120	15.70		135.70	156
2100	Azalea, 15"-18", B & B		96	.250		28.50	9.35		37.85	46
2300	Bayberry, 2'-3', B & B		57	.421		24	15.70		39.70	50
2600	Cataneaster, 15"-18", B & B		80	.300		27	11.20		38.20	47
2800	Dagwood, 3'-4', B & B	B-17	40	.800		31.50	31.50	19.55	82.55	105
2900	Euonymus, alatus compacta, 15" to 18", container	B-1	80	.300		25.50	11.20		36.70	45.50
3200	Forsythia, 2'-3', container	"	60	.400		18.70	14.95		33.65	43.50
3300	Hibiscus, 3'-4', B & B	B-17	75	.427		48	16.85	10.45	75.30	90
3400	Honeysuckle, 3'-4', B & B	B-1	60	.400		26	14.95		40.95	51.50
3500	Hydrangea, 2'-3', B & B	"	57	.421		29.50	15.70		45.20	56.50
3600	Lilac, 3'-4', B & B	B-17	40	.800		27.50	31.50	19.55	78.55	100
3900	Privet, bare root, 18"-24"	B-1	80	.300		14.25	11.20		25.45	33
4100	Quince, 2'-3', B & B	"	57	.421		28	15.70		43.70	54.50
4200	Russian alive, 3'-4', B & B	B-17	75	.427		26.50	16.85	10.45	53.80	66.50
4400	Spirea, 3'-4', B & B	B-1	70	.343		20	12.80		32.80	42
4500	Viburnum, 3'-4', B & B	B-17	40	.800		24	31.50	19.55	75.05	96.50

32 93 43 – Trees

32 93 43.20 Trees

0010	TREES										
0011	Deciduous, in prep. beds, balled & burlapped (B&B)										
0100	Ash, 2" caliper	G	B-17	8	4	Ea.	185	158	98	441	555
0200	Beech, 5'-6'	G		50	.640		185	25.50	15.65	226.15	260
0300	Birch, 6'-8', 3 stems	G		20	1.600		170	63	39	272	325
0500	Crabapple, 6'-8'	G		20	1.600		140	63	39	242	294

32 93 Plants

32 93 43 – Trees

32 93 43.20 Trees

			Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
0600	Dagwood, 4'-5'	G	B-17	40	.800	Ea.	130	31.50	19.55	181.05	213
0700	Eastern redbud 4'-5'	G		40	.800		148	31.50	19.55	199.05	232
0800	Elm, 8'-10'	G		20	1.600		260	63	39	362	425
0900	Ginkgo, 6'-7'	G		24	1.333		150	52.50	32.50	235	282
1000	Hawthorn, 8'-10', 1" caliper	G		20	1.600		163	63	39	265	320
1100	Honeylocust, 10'-12', 1-1/2" caliper	G		10	3.200		205	126	78	409	505
1300	Larch, 8'	G		32	1		125	39.50	24.50	189	226
1400	Linden, 8'-10', 1" caliper	G		20	1.600		143	63	39	245	297
1500	Magnolia, 4'-5'	G		20	1.600		100	63	39	202	250
1600	Maple, red, 8'-10', 1-1/2" caliper	G		10	3.200		200	126	78	404	500
1700	Mountain ash, 8'-10', 1" caliper	G		16	2		175	79	49	303	370
1800	Oak, 2-1/2"-3" caliper	G		6	5.333		320	211	130	661	815
2100	Planetree, 9'-11', 1-1/4" caliper	G		10	3.200		240	126	78	444	545
2200	Plum, 6'-8', 1" caliper	G		20	1.600		80	63	39	182	228
2300	Paplar, 9'-11', 1-1/4" caliper	G		10	3.200		145	126	78	349	440
2500	Sumac, 2'-3'	G		75	.427		45	16.85	10.45	72.30	87
2700	Tulip, 5'-6'	G		40	.800		48	31.50	19.55	99.05	123
2800	Willow, 6'-8', 1" caliper	G	▼	20	1.600	▼	95	63	39	197	245

32 94 Planting Accessories

32 94 13 – Landscape Edging

32 94 13.20 Edging

0010 EDGING

0050	Aluminum alloy, including stakes, 1/8" x 4", mill finish	B-1	390	.062	L.F.	2.26	2.30		4.56	6.05
0051	Black point		390	.062		2.62	2.30		4.92	6.40
0052	Black anodized		390	.062		3.03	2.30		5.33	6.85
0100	Brick, set horizontally, 1-1/2 bricks per L.F.	D-1	370	.043		1.39	1.79		3.18	4.24
0150	Set vertically, 3 bricks per L.F.	"	135	.119		3.60	4.89		8.49	11.40
0200	Corrugated aluminum, roll, 4" wide	1 Corp	650	.012		1.95	.56		2.51	3.02
0250	6" wide	"	550	.015		2.44	.67		3.11	3.71
0600	Railroad ties, 6" x 8"	2 Corp	170	.094		3.03	4.32		7.35	10
0650	7" x 9"		136	.118		3.36	5.40		8.76	12
0750	Redwood 2" x 4"		330	.048		2.26	2.22		4.48	5.90
0800	Steel edge strips, incl. stakes, 1/4" x 5"	B-1	390	.062		3.90	2.30		6.20	7.85
0850	3/16" x 4"	"	390	.062	▼	3.08	2.30		5.38	6.95

32 94 50 – Tree Guying

32 94 50.10 Tree Guying Systems

0010 TREE GUYING SYSTEMS

0015	Tree guying Including stakes, guy wire and wrap									
0100	Less than 3" caliper, 2 stakes	2 Clab	35	.457	Ea.	14.20	16.75		30.95	41.50
0200	3" to 4" caliper, 3 stakes	"	21	.762	"	19.20	28		47.20	64
1000	Including arrowhead anchor, cable, turnbuckles and wrap									
1100	Less than 3" caliper, 3" anchors	2 Clab	20	.800	Ea.	44.50	29.50		74	94
1200	3" to 6" caliper, 4" anchors		15	1.067		38	39		77	103
1300	6" caliper, 6" anchors		12	1.333		44.50	49		93.50	125
1400	8" caliper, 8" anchors		9	1.778		128	65		193	242

32 96 Transplanting

32 96 23 – Plant and Bulb Transplanting

32 96 23.23 Planting		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010	PLANTING						Labor	Equipment		
0012	Moving shrubs on site, 12" ball	B-62	28	.857	Ea.		34.50	6.20	40.70	59.50
0100	24" ball	"	22	1.091	"		44	7.90	51.90	75.50

32 96 23.43 Moving Trees

0010	MOVING TREES, On site									
0300	Moving trees on site, 36" ball	B-6	3.75	6.400	Ea.		257	97.50	354.50	500
0400	60" ball	"	1	24	"		965	365	1,330	1,875

[illegible]

Estimating Tips

33 10 00 Water Utilities

33 30 00 Sanitary Sewerage Utilities

33 40 00 Storm Drainage Utilities

- Never assume that the water, sewer, and drainage lines will go in at the early stages of the project. Consider the site access needs before dividing the site in half with open trenches, loose pipe, and machinery obstructions. Always inspect the site to establish that the site drawings are complete. Check off all existing utilities on your drawings as you locate them. Be especially careful with underground utilities because

appurtenances are sometimes buried during regrading or repaving operations. If you find any discrepancies, mark up the site plan for further research. Differing site conditions can be very costly if discovered later in the project.

- See also Section 33 01 00 for restoration of pipe where removal/replacement may be undesirable. Use of new types of piping materials can reduce the overall project cost. Owners/design engineers should consider the installing contractor as a valuable source of current information on utility products and local conditions that could lead to significant cost savings.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 33.

33 01 Operation and Maintenance of Utilities

33 01 10 – Operation and Maintenance of Water Utilities

						Doily	Labor-	2014 Bore Costs			Total			
						Crew	Output	Hours	Unit	Material	Labor	Equipment	Total	Incl O&P
33 01 10.10	Corrosion Resistance													
0010	CORROSION RESISTANCE													
0012	Wrap & coat, add to pipe, 4" diameter								L.F.	2.53			2.53	2.78
0040	6" diameter									3.81			3.81	4.19
0060	8" diameter									4.53			4.53	4.98
0100	12" diameter									7.45			7.45	8.20
0200	24" diameter									14.40			14.40	15.85
0500	Coating, bituminous, per diameter inch, 1 coat, add									.64			.64	.70
0540	3 coat									1.93			1.93	2.12
0560	Coal tar epoxy, per diameter inch, 1 coat, add									.23			.23	.25
0600	3 coat									.69			.69	.76

33 01 30 – Operation and Maintenance of Sewer Utilities

33 01 30.72 Relining Sewers

0010	RELINING SEWERS									
0011	With cement incl. bypass & cleaning									
0020	Less than 10,000 L.F., urban, 6" to 10"	C-17E	130	.615	L.F.	9.55	29.50	.73	39.78	57
0200	24" to 36"		90	.889		15.25	42.50	1.05	58.80	83.50
0300	48" to 72"		80	1		24.50	47.50	1.18	73.18	102

33 05 Common Work Results for Utilities

33 05 16 – Utility Structures

33 05 16.13 Precast Concrete Utility Boxes

0010	PRECAST CONCRETE UTILITY BOXES, 6" thick									
0050	5' x 10' x 6' high, I.D.	B-13	2	28	Ea.	3,675	1,125	375	5,175	6,125
0100	6' x 10' x 6' high, I.D.		2	28		3,800	1,125	375	5,300	6,300
0150	5' x 12' x 6' high, I.D.		2	28		4,025	1,125	375	5,525	6,525
0200	6' x 12' x 6' high, I.D.		1.80	31.111		4,525	1,250	415	6,190	7,325
0250	6' x 13' x 6' high, I.D.		1.50	37.333		5,925	1,500	495	7,920	9,350
0300	8' x 14' x 7' high, I.D.		1	56		6,400	2,225	745	9,370	11,300
0350	Hand hole, precast concrete, 1-1/2" thick									
0400	1'-0" x 2'-0" x 1'-9", I.D., light duty	B-1	4	6	Ea.	410	224		634	795
0450	4'-6" x 3'-2" x 2'-0", O.D., heavy duty	B-6	3	8	"	1,475	320	122	1,917	2,225

33 05 23 – Trenchless Utility Installation

33 05 23.19 Microtunneling

0010	MICROTUNNELING									
0011	Not including excavation, backfill, shoring,									
0020	or dewatering, average 50' /day, slurry method									
0100	24" to 48" outside diameter, minimum				L.F.				875	965
0110	Adverse conditions, add				%				50%	50%
1000	Rent microtunneling machine, average monthly lease				Month				97,500	107,000
1010	Operating technician				Day				630	705
1100	Mobilization and demobilization, minimum				Job				41,200	45,900
1110	Maximum				"				445,500	490,500

33 05 23.20 Horizontal Boring

0010	HORIZONTAL BORING									
0011	Casing only, 100' minimum,									
0020	not incl. jacking pits or dewatering									
0100	Roadwork, 1/2" thick wall, 24" diameter casing	B-42	20	3.200	L.F.	121	132	68.50	321.50	415
0200	36" diameter		16	4		223	165	85.50	473.50	600
0300	48" diameter		15	4.267		310	176	91	577	715
0500	Railroad work, 24" diameter		15	4.267		121	176	91	388	510

33 05 Common Work Results for Utilities

33 05 23 – Trenchless Utility Installation

33 05 23.20 Horizontal Boring		Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs			Total Incl O&P
							Labor	Equipment	Total	
0600	36" diameter	B-42	14	4.571	L.F.	223	189	97.50	509.50	650
0700	48" diameter		12	5.333		310	220	114	644	810
0900	For ledge, add								20%	20%

33 05 26 – Utility Identification

33 05 26.10 Utility Accessories

0010	UTILITY ACCESSORIES									
0400	Underground tape, detectable, reinforced, alum. foil core, 2"	1 Clab	150	.053	C.L.F.	5.65	1.95		7.60	9.25
0500	6"	"	140	.057	"	27.50	2.09		29.59	33.50

33 11 Water Utility Distribution Piping

33 11 13 – Public Water Utility Distribution Piping

33 11 13.15 Water Supply, Ductile Iron Pipe

0010	WATER SUPPLY, DUCTILE IRON PIPE	R331113-80								
0020	Not including excavation or backfill									
2000	Pipe, class 50 water piping, 18' lengths									
2020	Mechanical joint, 4" diameter	B-21A	200	.200	L.F.	15.60	9.15	2.41	27.16	34
2040	6" diameter		160	.250		17.75	11.45	3.01	32.21	40.50
2060	8" diameter		133.33	.300		24.50	13.75	3.61	41.86	52
2080	10" diameter		114.29	.350		35	16.05	4.21	55.26	67.50
2100	12" diameter		105.26	.380		42.50	17.40	4.57	64.47	78.50
2120	14" diameter		100	.400		60	18.35	4.81	83.16	99.50
2140	16" diameter		72.73	.550		63.50	25	6.60	95.10	116
2160	18" diameter		68.97	.580		74.50	26.50	7	108	130
2170	20" diameter		57.14	.700		85.50	32	8.40	125.90	153
2180	24" diameter		47.06	.850		108	39	10.25	157.25	190
3000	Tyton, push-on joint, 4" diameter		400	.100		17	4.58	1.20	22.78	27
3020	6" diameter		333.33	.120		17.85	5.50	1.44	24.79	29.50
3040	8" diameter		200	.200		23.50	9.15	2.41	35.06	42
3060	10" diameter		181.82	.220		35	10.10	2.65	47.75	57
3080	12" diameter		160	.250		37	11.45	3.01	51.46	62
3100	14" diameter		133.33	.300		41	13.75	3.61	58.36	70
3120	16" diameter		114.29	.350		49.50	16.05	4.21	69.76	83.50
3140	18" diameter		100	.400		55	18.35	4.81	78.16	94
3160	20" diameter		88.89	.450		57	20.50	5.40	82.90	100
3180	24" diameter	▼	76.92	.520	▼	64	24	6.25	94.25	114
8000	Fittings, mechanical joint									
8006	90° bend, 4" diameter	B-20A	16	2	Eq.	273	89.50		362.50	435
8020	6" diameter		12.80	2.500		405	112		517	615
8040	8" diameter		10.67	2.999		725	134		859	1,000
8060	10" diameter	B-21A	11.43	3.500		980	160	42	1,182	1,375
8080	12" diameter		10.53	3.799		1,375	174	45.50	1,594.50	1,825
8100	14" diameter		10	4		1,850	183	48	2,081	2,350
8120	16" diameter		7.27	5.502		2,400	252	66	2,718	3,075
8140	18" diameter		6.90	5.797		3,225	266	69.50	3,560.50	4,025
8160	20" diameter		5.71	7.005		4,050	320	84.50	4,454.50	5,025
8180	24" diameter		4.70	8.511		6,275	390	102	6,767	7,600
8200	Wye or tee, 4" diameter	B-20A	10.67	2.999		440	134		574	690
8220	6" diameter		8.53	3.751		670	168		838	990
8240	8" diameter	▼	7.11	4.501		1,075	201		1,276	1,475
8260	10" diameter	B-21A	7.62	5.249	▼	1,550	241	63	1,854	2,125

33 11 Water Utility Distribution Piping

33 11 13 – Public Water Utility Distribution Piping

33 11 13.15 Water Supply, Ductile Iron Pipe		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8280	12" diameter	B-21A	7.02	5.698	Ea.	2,025	261	68.50	2,354.50	2,700
8300	14" diameter		6.67	5.997		3,250	275	72	3,597	4,075
8320	16" diameter		4.85	8.247		3,600	380	99	4,079	4,650
8340	18" diameter		4.60	8.696		4,875	400	105	5,380	6,100
8360	20" diameter		3.81	10.499		6,825	480	126	7,431	8,400
8380	24" diameter		3.14	12.739		11,600	585	153	12,338	13,800
8450	Decreaser, 6" x 4" diameter	B-20A	14.22	2.250		360	101		461	550
8460	8" x 6" diameter	"	11.64	2.749		525	123		648	765
8470	10" x 6" diameter	B-21A	13.33	3.001		645	138	36	819	960
8480	12" x 6" diameter		12.70	3.150		795	144	38	977	1,125
8490	16" x 6" diameter		10	4		1,425	183	48	1,656	1,900
8500	20" x 6" diameter		8.42	4.751		3,125	218	57	3,400	3,850
8550	Piping, butterfly valves, cast iron									
8560	4" diameter	B-20	6	4	Ea.	715	163		878	1,050
8570	6" diameter	"	5	4.800		850	196		1,046	1,250
8580	8" diameter	B-21	4	7		1,025	295	35	1,355	1,625
8590	10" diameter		3.50	8		1,500	340	40	1,880	2,225
8600	12" diameter		3	9.333		1,550	395	46.50	1,991.50	2,375
8610	14" diameter		2	14		3,700	590	70	4,360	5,050
8620	16" diameter		2	14		3,225	590	70	3,885	4,525

33 11 13.25 Water Supply, Polyvinyl Chloride Pipe

0010	WATER SUPPLY, POLYVINYL CHLORIDE PIPE									
0020	Not including excavation or backfill, unless specified									
2100	PVC pipe, Class 150, 1-1/2" diameter	Q-1A	750	.013	L.F.	.43	.77		1.20	1.64
2120	2" diameter		686	.015		.67	.84		1.51	2.02
2140	2-1/2" diameter		500	.020		1.28	1.16		2.44	3.16
2160	3" diameter	B-20	430	.056	▼	1.38	2.28		3.66	5.05
3010	AWWA C905, PR 100, DR 25									
3030	14" diameter	B-20A	213	.150	L.F.	13.65	6.70		20.35	25.50
3040	16" diameter		200	.160		19.20	7.15		26.35	32
3050	18" diameter		160	.200		24	8.95		32.95	40
3060	20" diameter		133	.241		30	10.75		40.75	49.50
3070	24" diameter		107	.299		43	13.40		56.40	67.50
3080	30" diameter		80	.400		81	17.90		98.90	117
3090	36" diameter		80	.400		126	17.90		143.90	166
3100	42" diameter		60	.533		168	24		192	222
3200	48" diameter		60	.533		220	24		244	279
4520	Pressure pipe Class 150, SDR 18, AWWA C900, 4" diameter		380	.084		2.61	3.77		6.38	8.60
4530	6" diameter		316	.101		5.25	4.53		9.78	12.70
4540	8" diameter		264	.121		8.90	5.40		14.30	18
4550	10" diameter		220	.145		15.45	6.50		21.95	27
4560	12" diameter	▼	186	.172	▼	20.50	7.70		28.20	34.50
8000	Fittings with rubber gasket									
8003	Class 150, DR 18									
8006	90° Bend, 4" diameter	B-20	100	.240	Ea.	42.50	9.80		52.30	61.50
8020	6" diameter		90	.267		74.50	10.90		85.40	99
8040	8" diameter		80	.300		144	12.25		156.25	178
8060	10" diameter		50	.480		330	19.60		349.60	390
8080	12" diameter		30	.800		425	32.50		457.50	515
8100	Tee, 4" diameter		90	.267		58	10.90		68.90	80.50
8120	6" diameter		80	.300		144	12.25		156.25	177
8140	8" diameter	▼	70	.343	▼	184	14		198	224

33 11 Water Utility Distribution Piping

33 11 13 – Public Water Utility Distribution Piping

33 11 13.25 Water Supply, Polyvinyl Chloride Pipe		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8160	10" diameter	B-20	40	.600	Ea.	590	24.50		614.50	690
8180	12" diameter		20	1.200		765	49		814	915
8200	45° Bend, 4" diameter		100	.240		42	9.80		51.80	61
8220	6" diameter		90	.267		73	10.90		83.90	97
8240	8" diameter		50	.480		144	19.60		163.60	190
8260	10" diameter		50	.480		330	19.60		349.60	390
8280	12" diameter		30	.800		425	32.50		457.50	515
8300	Reducing tee 6" x 4"		100	.240		126	9.80		135.80	153
8320	8" x 6"		90	.267		224	10.90		234.90	263
8330	10" x 6"		90	.267		380	10.90		390.90	430
8340	10" x 8"		90	.267		395	10.90		405.90	445
8350	12" x 6"		90	.267		450	10.90		460.90	505
8360	12" x 8"		90	.267		470	10.90		480.90	530
8400	Tapped service tee (threaded type) 6" x 6" x 3/4"		100	.240		95	9.80		104.80	120
8430	6" x 6" x 1"		90	.267		95	10.90		105.90	122
8440	6" x 6" x 1-1/2"		90	.267		95	10.90		105.90	122
8450	6" x 6" x 2"		90	.267		95	10.90		105.90	122
8460	8" x 8" x 3/4"		90	.267		140	10.90		150.90	171
8470	8" x 8" x 1"		90	.267		140	10.90		150.90	171
8480	8" x 8" x 1-1/2"		90	.267		140	10.90		150.90	171
8490	8" x 8" x 2"		90	.267		140	10.90		150.90	171
8500	Repair coupling 4"		100	.240		22.50	9.80		32.30	40
8520	6" diameter		90	.267		34.50	10.90		45.40	55
8540	8" diameter		50	.480		83	19.60		102.60	122
8560	10" diameter		50	.480		208	19.60		227.60	260
8580	12" diameter		50	.480		233	19.60		252.60	288
8600	Plug end 4"		100	.240		22.50	9.80		32.30	40
8620	6" diameter		90	.267		40.50	10.90		51.40	61.50
8640	8" diameter		50	.480		69	19.60		88.60	107
8660	10" diameter		50	.480		96.50	19.60		116.10	137
8680	12" diameter		50	.480		119	19.60		138.60	162

33 12 Water Utility Distribution Equipment

33 12 19 – Water Utility Distribution Fire Hydrants

33 12 19.10 Fire Hydrants

0010	FIRE HYDRANTS									
0020	Mechanical joints unless otherwise noted									
1000	Fire hydrants, two way; excavation and backfill not incl.									
1100	4-1/2" valve size, depth 2'-0"	B-21	10	2.800	Ea.	1,650	118	14	1,782	2,025
1120	2'-6"		10	2.800		1,750	118	14	1,882	2,125
1140	3'-0"		10	2.800		1,875	118	14	2,007	2,250
1300	7'-0"		6	4.667		2,150	197	23.50	2,370.50	2,700
2400	Lower barrel extensions with stems, 1'-0"	B-20	14	1.714		355	70		425	500
2480	3'-0"	"	12	2		770	81.50		851.50	970

33 16 Water Utility Storage Tanks

33 16 13 – Aboveground Water Utility Storage Tanks

33 16 13.13 Steel Water Storage Tanks				Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 STEEL WATER STORAGE TANKS									Labor	Equipment		
0910	Steel, ground level, ht./diam. less than 1, not incl. fdn., 100,000 gallons						Ea.				202,000	244,500
1000	250,000 gallons										295,500	324,000
1200	500,000 gallons										417,000	458,500
1250	750,000 gallons										538,000	591,500
1300	1,000,000 gallons										558,000	725,500
1500	2,000,000 gallons										1,043,000	1,148,000
1600	4,000,000 gallons										2,121,000	2,333,000
1800	6,000,000 gallons										3,095,000	3,405,000
1850	8,000,000 gallons										4,068,000	4,475,000
1910	10,000,000 gallons										5,050,000	5,554,500
2100	Steel standpipes, ht./diam. more than 1, 100' to overflow, no fdn.											
2200	500,000 gallons						Ea.				546,500	600,500
2400	750,000 gallons										722,500	794,500
2500	1,000,000 gallons										1,060,500	1,167,000
2700	1,500,000 gallons										1,749,000	1,923,000
2800	2,000,000 gallons										2,327,000	2,559,000

33 16 13.16 Prestressed Conc. Water Storage Tanks

0010 PRESTRESSED CONC. WATER STORAGE TANKS												
0020	Not including fdn., pipe or pumps, 250,000 gallons						Ea.				299,000	329,500
0100	500,000 gallons										487,000	536,000
0300	1,000,000 gallons										707,000	807,500
0400	2,000,000 gallons										1,072,000	1,179,000
0600	4,000,000 gallons										1,706,000	1,877,000
0700	6,000,000 gallons										2,266,000	2,493,000
0750	8,000,000 gallons										2,924,000	3,216,000
0800	10,000,000 gallons										3,533,000	3,886,000

33 16 13.23 Plastic-Coated Fabric Pillow Water Tanks

0010 PLASTIC-COATED FABRIC PILLOW WATER TANKS												
7000	Water tanks, vinyl coated fabric pillow tanks, freestanding, 5,000 gallons			4 Clab	4	8	Ea.	3,600	293		3,893	4,400
7100	Supporting embankment not included, 25,000 gallons			6 Clab	2	24		13,000	880		13,880	15,600
7200	50,000 gallons			8 Clab	1.50	42.667		18,100	1,575		19,675	22,300
7300	100,000 gallons			9 Clab	.90	80		41,500	2,925		44,425	50,000
7400	150,000 gallons				.50	144		59,500	5,275		64,775	73,500
7500	200,000 gallons				.40	180		73,500	6,600		80,100	91,000
7600	250,000 gallons				.30	240		103,500	8,800		112,300	127,500

33 16 19 – Elevated Water Utility Storage Tanks

33 16 19.50 Elevated Water Storage Tanks

0010 ELEVATED WATER STORAGE TANKS												
0011	Not incl. pipe, pumps or foundation											
3000	Elevated water tanks, 100' to bottom capacity line, incl. painting											
3010	50,000 gallons						Ea.				185,000	204,000
3300	100,000 gallons										280,000	307,500
3400	250,000 gallons										751,500	826,500
3600	500,000 gallons										1,336,000	1,470,000
3700	750,000 gallons										1,622,000	1,783,500
3900	1,000,000 gallons										2,322,000	2,556,000

33 21 Water Supply Wells

33 21 13 – Public Water Supply Wells

33 21 13.10 Wells and Accessories		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	WELLS & ACCESSORIES									
0011	Domestic									
0100	Drilled, 4" to 6" diameter	B-23	120	.333	L.F.		12.35	24	36.35	45.50
0200	8" diameter	"	95.20	.420	"		15.55	30.50	46.05	57.50
0400	Gravel pack well, 40' deep, incl. gravel & casing, complete									
0500	24" diameter casing x 18" diameter screen	B-23	.13	307	Total	38,800	11,400	22,200	72,400	84,500
0600	36" diameter casing x 18" diameter screen		.12	333	"	40,000	12,400	24,000	76,400	89,500
0800	Observation wells, 1-1/4" riser pipe	▼	163	.245	V.L.F.	20.50	9.10	17.70	47.30	56
0900	For flush Buffalo roadway box, add	1 Skwk	16.60	.482	Ea.	51.50	23		74.50	92
1200	Test well, 2-1/2" diameter, up to 50' deep (15 to 50 GPM)	B-23	1.51	26.490	"	810	980	1,900	3,690	4,525
1300	Over 50' deep, add	"	121.80	.328	L.F.	21.50	12.15	23.50	57.15	68.50
1500	Pumps, installed in wells to 100' deep, 4" submersible									
1510	1/2 H.P.	Q-1	3.22	4.969	Ea.	450	257		707	885
1520	3/4 H.P.		2.66	6.015		590	310		900	1,125
1600	1 H.P.	▼	2.29	6.987		680	360		1,040	1,300
1700	1-1/2 H.P.	Q-22	1.60	10		735	520	415	1,670	2,050
1800	2 H.P.		1.33	12.030		890	625	500	2,015	2,475
1900	3 H.P.		1.14	14.035		1,375	725	580	2,680	3,250
2000	5 H.P.		1.14	14.035		2,300	725	580	3,605	4,275
3000	Pump, 6" submersible, 25' to 150' deep, 25 H.P., 249 to 297 GPM		.89	17.978		7,175	930	745	8,850	10,100
3100	25' to 500' deep, 30 H.P., 100 to 300 GPM	▼	.73	21.918	▼	8,600	1,125	910	10,635	12,200
8000	Steel well casing	B-23A	3020	.008	Lb.	1.22	.33	.90	2.45	2.83
9950	See Section 31 23 19.40 for wellpoints									
9960	See Section 31 23 19.30 for drainage wells									

33 21 13.20 Water Supply Wells, Pumps

0010	WATER SUPPLY WELLS, PUMPS									
0011	With pressure control									
1000	Deep well, jet, 42 gal. galvanized tank									
1040	3/4 HP	1 Plum	.80	10	Ea.	1,100	575		1,675	2,100
3000	Shallow well, jet, 30 gal. galvanized tank									
3040	1/2 HP	1 Plum	2	4	Ea.	895	230		1,125	1,325

33 31 Sanitary Utility Sewerage Piping

33 31 13 – Public Sanitary Utility Sewerage Piping

33 31 13.15 Sewage Collection, Concrete Pipe

0010	SEWAGE COLLECTION, CONCRETE PIPE									
0020	See Section 33 41 13.60 for sewage/drainage collection, concrete pipe									

33 31 13.25 Sewage Collection, Polyvinyl Chloride Pipe

0010	SEWAGE COLLECTION, POLYVINYL CHLORIDE PIPE									
0020	Nat including excavation or backfill									
2000	20' lengths, SDR 35, B&S, 4" diameter	B-20	375	.064	L.F.	1.46	2.62		4.08	5.65
2040	6" diameter		350	.069		3.29	2.80		6.09	7.95
2080	13' lengths, SDR 35, B&S, 8" diameter	▼	335	.072		6.95	2.93		9.88	12.10
2120	10" diameter	B-21	330	.085		11.40	3.58	.42	15.40	18.50
2160	12" diameter		320	.088		12.75	3.69	.44	16.88	20
2200	15" diameter	▼	240	.117		13	4.92	.58	18.50	22.50
4000	Piping, DWV PVC, no exc./bkfill., 10' L, Sch 40, 4" diameter	B-20	375	.064		4.64	2.62		7.26	9.15
4010	6" diameter		350	.069		10.20	2.80		13	15.55
4020	8" diameter		335	.072		19.70	2.93		22.63	26

33 36 Utility Septic Tanks

33 36 13 – Utility Septic Tank and Effluent Wet Wells

				Daily	Labor-			2014 Bare Costs		Total	Total
				Crew	Output	Hours	Unit	Material	Labor	Equipment	Incl O&P
33 36 13.13 Concrete Utility Septic Tank											
0010	CONCRETE UTILITY SEPTIC TANK										
0011	Not including excavation or piping										
0015	Septic tanks, precast, 1,000 gallon			B-21	8	3.500	Ea.	1,075	148	17.50	1,240.50
0060	1,500 gallon				7	4		1,500	169	20	1,689
0100	2,000 gallon			▼	5	5.600		1,975	236	28	2,239
0200	5,000 gallon			B-13	3.50	16		9,475	640	213	10,328
0300	15,000 gallon, 4 piece			B-13B	1.70	32.941		21,700	1,325	670	23,695
0400	25,000 gallon, 4 piece				1.10	50.909		42,200	2,025	1,025	45,250
0500	40,000 gallon, 4 piece				.80	70		54,000	2,800	1,425	58,225
0520	50,000 gallon, 5 piece			B-13C	.60	93.333		62,000	3,725	2,850	68,575
0640	75,000 gallon, cast in place			C-14C	.25	448		75,500	19,700	130	95,330
0660	100,000 gallon			"	.15	746		93,500	32,800	217	126,517
1150	Leaching field chambers, 13' x 3'-7" x 1'-4", standard			B-13	16	3.500		480	140	46.50	666.50
1200	Heavy duty, 8' x 4' x 1'-6"				14	4		284	159	53.50	496.50
1300	13' x 3'-9" x 1'-6"				12	4.667		1,125	186	62	1,373
1350	20' x 4' x 1'-6"			▼	5	11.200		1,175	445	149	1,769
1400	Leaching pit, precast concrete, 3' diameter, 3' deep			B-21	8	3.500		710	148	17.50	875.50
1500	6' diameter, 3' section				4.70	5.957		885	251	30	1,166
2000	Velocity reducing pit, precast conc., 6' diameter, 3' deep				4.70	5.957		1,600	251	30	1,881

33 36 13.19 Polyethylene Utility Septic Tank

0010	POLYETHYLENE UTILITY SEPTIC TANK										
0015	High density polyethylene, 1,000 gallon			B-21	8	3.500	Ea.	1,300	148	17.50	1,465.50
0020	1,250 gallon				8	3.500		1,400	148	17.50	1,565.50
0025	1,500 gallon				7	4		1,650	169	20	1,839

33 36 19 – Utility Septic Tank Effluent Filter

33 36 19.13 Utility Septic Tank Effluent Tube Filter

0010	UTILITY SEPTIC TANK EFFLUENT TUBE FILTER										
3000	Effluent filter, 4" diameter			1 Skwk	8	1	Ea.	55.50	47.50		103
3020	6" diameter			"	7	1.143	"	230	54		284

33 36 33 – Utility Septic Tank Drainage Field

33 36 33.13 Utility Septic Tank Tile Drainage Field

0010	UTILITY SEPTIC TANK TILE DRAINAGE FIELD										
0015	Distribution box, concrete, 5 outlets			2 Clab	20	.800	Ea.	78.50	29.50		108
0020	7 outlets				16	1		78.50	36.50		115
0025	9 outlets				8	2		475	73.50		548.50
0115	Distribution boxes, HDPE, 5 outlets				20	.800		64.50	29.50		94
0120	8 outlets			▼	10	1.600		68.50	58.50		127
0240	Distribution boxes, Outlet Flow Leveler			1 Clab	50	.160		2.22	5.85		8.07
0300	Precast concrete, galley, 4' x 4' x 4'			B-21	16	1.750	▼	241	74	8.75	323.75

33 36 50 – Drainage Field Systems

33 36 50.10 Drainage Field Excavation and Fill

0010	DRAINAGE FIELD EXCAVATION AND FILL										
2200	Septic tank & drainage field excavation with 3/4 c.y backhoe			B-12F	145	.110	C.Y.		4.79	4.57	9.36
2400	4' trench for disposal field, 3/4 C.Y. backhoe			"	335	.048	L.F.		2.08	1.98	4.06
2600	Gravel fill, run of bank			B-6	150	.160	C.Y.	19.90	6.40	2.44	28.74
2800	Crushed stone, 3/4"			"	150	.160	"	34.50	6.40	2.44	43.34

33 41 Storm Utility Drainage Piping

33 41 13 – Public Storm Utility Drainage Piping

33 41 13.40 Piping, Storm Drainage, Corrugated Metal		Daily Crew	Output	Labor- Hours	Unit	Material	2014 Bare Costs			Total Incl O&P
							Labor	Equipment	Total	
0010	PIPING, STORM DRAINAGE, CORRUGATED METAL									
0020	Nat including excavation or backfill									
2000	Corrugated metal pipe, galvanized									
2020	Bituminous coated with paved invert, 20' lengths									
2040	8" diameter, 16 ga.	B-14	330	.145	L.F.	8.70	5.65	1.11	15.46	19.40
2060	10" diameter, 16 ga.		260	.185		9.05	7.15	1.41	17.61	22.50
2080	12" diameter, 16 ga.		210	.229		11.10	8.85	1.74	21.69	27.50
2100	15" diameter, 16 ga.		200	.240		15.25	9.30	1.83	26.38	33
2120	18" diameter, 16 ga.		190	.253		16.75	9.80	1.92	28.47	35.50
2140	24" diameter, 14 ga.	▼	160	.300		21.50	11.60	2.28	35.38	44
2160	30" diameter, 14 ga.	B-13	120	.467		28	18.60	6.20	52.80	66
2180	36" diameter, 12 ga.		120	.467		35.50	18.60	6.20	60.30	74.50
2200	48" diameter, 12 ga.	▼	100	.560		53	22.50	7.45	82.95	100
2220	60" diameter, 10 ga.	B-13B	75	.747		80	30	15.15	125.15	150
2240	72" diameter, 8 ga.	"	45	1.244	▼	95.50	49.50	25.50	170.50	209
2500	Galvanized, uncoated, 20' lengths									
2520	8" diameter, 16 ga.	B-14	355	.135	L.F.	7.85	5.25	1.03	14.13	17.85
2540	10" diameter, 16 ga.		280	.171		9	6.65	1.30	16.95	21.50
2560	12" diameter, 16 ga.		220	.218		10	8.45	1.66	20.11	26
2580	15" diameter, 16 ga.		220	.218		12.50	8.45	1.66	22.61	28.50
2600	18" diameter, 16 ga.	▼	205	.234		15.10	9.05	1.78	25.93	32.50
2620	24" diameter, 14 ga.	▼	175	.274		19	10.60	2.09	31.69	39.50
2640	30" diameter, 14 ga.	B-13	130	.431		25	17.15	5.75	47.90	60.50
2660	36" diameter, 12 ga.	▼	130	.431		32	17.15	5.75	54.90	68
2680	48" diameter, 12 ga.	▼	110	.509		47.50	20.50	6.80	74.80	91
2690	60" diameter, 10 ga.	B-13B	78	.718	▼	72	28.50	14.55	115.05	139
2780	End sections, 8" diameter	B-14	35	1.371	Eq.	73	53	10.45	136.45	173
2785	10" diameter		35	1.371		77	53	10.45	140.45	178
2790	12" diameter		35	1.371		114	53	10.45	177.45	218
2800	18" diameter	▼	30	1.600		115	62	12.20	189.20	236
2810	24" diameter	B-13	25	2.240		215	89.50	30	334.50	405
2820	30" diameter		25	2.240		330	89.50	30	449.50	530
2825	36" diameter		20	2.800		480	112	37.50	629.50	740
2830	48" diameter	▼	10	5.600		950	223	74.50	1,247.50	1,475
2835	60" diameter	B-13B	5	11.200		1,650	445	227	2,322	2,725
2840	72" diameter	"	4	14	▼	1,975	560	284	2,819	3,325

33 41 13.60 Sewage/Drainage Collection, Concrete Pipe

0010	SEWAGE/DRAINAGE COLLECTION, CONCRETE PIPE									
0020	Nat including excavation or backfill									
1000	Non-reinforced pipe, extra strength, B&S or T&G joints									
1010	6" diameter	B-14	265.04	.181	L.F.	5.60	7	1.38	13.98	18.45
1020	8" diameter		224	.214		6.15	8.30	1.63	16.08	21.50
1030	10" diameter		216	.222		6.85	8.60	1.69	17.14	22.50
1040	12" diameter		200	.240		8.15	9.30	1.83	19.28	25.50
1050	15" diameter		180	.267		11.25	10.35	2.03	23.63	30.50
1060	18" diameter		144	.333		13.20	12.90	2.54	28.64	37
1070	21" diameter		112	.429		16.30	16.60	3.26	36.16	47
1080	24" diameter	▼	100	.480	▼	22	18.60	3.65	44.25	56.50
2000	Reinforced culvert, class 3, no gaskets									
2010	12" diameter	B-14	150	.320	L.F.	10	12.40	2.44	24.84	32.50
2020	15" diameter		150	.320		13	12.40	2.44	27.84	36
2030	18" diameter	▼	132	.364	▼	16.75	14.10	2.77	33.62	43

33 41 Storm Utility Drainage Piping

33 41 13 - Public Storm Utility Drainage Piping

33 41 13.60 Sewage/Drainage Collection, Concrete Pipe		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2035	21" diameter	B-14	120	.400	L.F.	21	15.50	3.04	39.54	50.50
2040	24" diameter		100	.480		25	18.60	3.65	47.25	60
2045	27" diameter	B-13	92	.609		36	24.50	8.10	68.60	85.50
2050	30" diameter		88	.636		40.50	25.50	8.50	74.50	93
2060	36" diameter		72	.778		55	31	10.35	96.35	119
2070	42" diameter	B-13B	72	.778		74	31	15.80	120.80	146
2080	48" diameter		64	.875		88	35	17.75	140.75	170
2090	60" diameter		48	1.167		135	46.50	23.50	205	247
2100	72" diameter		40	1.400		205	56	28.50	289.50	345
2120	84" diameter		32	1.750		250	70	35.50	355.50	420
2140	96" diameter		24	2.333		300	93	47.50	440.50	525
2200	With gaskets, class 3, 12" diameter	B-21	168	.167		11	7.05	.83	18.88	24
2220	15" diameter		160	.175		14.30	7.40	.88	22.58	28
2230	18" diameter		152	.184		18.45	7.80	.92	27.17	33.50
2240	24" diameter		136	.206		31.50	8.70	1.03	41.23	49
2260	30" diameter	B-13	88	.636		48	25.50	8.50	82	101
2270	36" diameter	"	72	.778		64.50	31	10.35	105.85	129
2290	48" diameter	B-13B	64	.875		100	35	17.75	152.75	183
2310	72" diameter	"	40	1.400		224	56	28.50	308.50	365
2330	Flared ends, 12" diameter	B-21	31	.903	Eu.	225	38	4.52	267.52	310
2340	15" diameter		25	1.120		266	47.50	5.60	319.10	370
2400	18" diameter		20	1.400		305	59	7	371	435
2420	24" diameter		14	2		370	84.50	10	464.50	545
2440	36" diameter	B-13	10	5.600		790	223	74.50	1,087.50	1,300
3080	Radius pipe, add to pipe prices, 12" to 60" diameter				L.F.	50%				
3090	Over 60" diameter, add				"	20%				
3500	Reinforced elliptical, 8' lengths, C507 class 3									
3520	14" x 23" inside, round equivalent 18" diameter	B-21	82	.341	L.F.	40.50	14.40	1.71	56.61	68.50
3530	24" x 38" inside, round equivalent 30" diameter	B-13	58	.966		61.50	38.50	12.85	112.85	141
3540	29" x 45" inside, round equivalent 36" diameter		52	1.077		78	43	14.35	135.35	167
3550	38" x 60" inside, round equivalent 48" diameter		38	1.474		133	58.50	19.65	211.15	258
3560	48" x 76" inside, round equivalent 60" diameter		26	2.154		185	86	28.50	299.50	370
3570	58" x 91" inside, round equivalent 72" diameter		22	2.545		270	101	34	405	490
3780	Concrete slatted pipe, class 4 mortar joint.									
3800	12" diameter	B-21	168	.167	L.F.	27	7.05	.83	34.88	41.50
3840	18" diameter	"	152	.184	"	31.50	7.80	.92	40.22	47.50
3900	Concrete slatted pipe, Class 4 O-ring joint									
3940	12" diameter	B-21	168	.167	L.F.	27	7.05	.83	34.88	41.50
3960	18" diameter	"	152	.184	"	31.50	7.80	.92	40.22	47.50

33 42 Culverts

33 42 16 - Concrete Culverts

33 42 16.15 Oval Arch Culverts

0010 OVAL ARCH CULVERTS										
3000	Corrugated galvanized or aluminum, coated & paved									
3020	17" x 13", 16 ga., 15" equivalent	B-14	200	.240	L.F.	13.25	9.30	1.83	24.38	31
3040	21" x 15", 16 ga., 18" equivalent		150	.320		16.05	12.40	2.44	30.89	39.50
3060	28" x 20", 14 ga., 24" equivalent		125	.384		24	14.85	2.92	41.77	52
3080	35" x 24", 14 ga., 30" equivalent		100	.480		29.50	18.60	3.65	51.75	65
3100	42" x 29", 12 ga., 36" equivalent	B-13	100	.560		35.50	22.50	7.45	65.45	81
3120	49" x 33", 12 ga., 42" equivalent		90	.622		41	25	8.30	74.30	92.50

33 42 Culverts

33 42 16 – Concrete Culverts

33 42 16.15 Oval Arch Culverts		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
3140	57" x 38", 12 ga., 48" equivalent	B-13	75	.747	L.F.	57	30	9.95	96.95	119
3160	Steel, plain oval arch culverts, plain									
3180	17" x 13", 16 ga., 15" equivalent	B-14	225	.213	L.F.	11.95	8.25	1.62	21.82	27.50
3200	21" x 15", 16 ga., 18" equivalent		175	.274		14.45	10.60	2.09	27.14	34.50
3220	28" x 20", 14 ga., 24" equivalent	▼	150	.320		21.50	12.40	2.44	36.34	45
3240	35" x 24", 14 ga., 30" equivalent	B-13	108	.519		26.50	20.50	6.90	53.90	68
3260	42" x 29", 12 ga., 36" equivalent		108	.519		32	20.50	6.90	59.40	74.50
3280	49" x 33", 12 ga., 42" equivalent		92	.609		37	24.50	8.10	69.60	87
3300	57" x 38", 12 ga., 48" equivalent		75	.747		51.50	30	9.95	91.45	113
3320	End sections, 17" x 13"		22	2.545	Ea.	144	101	34	279	355
3340	42" x 29"		17	3.294	"	395	131	44	570	685
3360	Multi-plate arch, steel	B-20	1690	.014	Lb.	1.30	.58		1.88	2.33

33 44 Storm Utility Water Drains

33 44 13 – Utility Area Drains

33 44 13.13 Catchbasins

0010	CATCHBASINS									
0011	Not including footing & excavation									
1600	Frames & grates, C.I., 24" square, 500 lb.	B-6	7.80	3.077	Ea.	340	123	47	510	615
1700	26" D shape, 600 lb.		7	3.429		505	138	52	695	825
1800	Light traffic, 18" diameter, 100 lb.		10	2.400		122	96.50	36.50	255	320
1900	24" diameter, 300 lb.		8.70	2.759		196	111	42	349	430
2000	36" diameter, 900 lb.		5.80	4.138		570	166	63	799	950
2100	Heavy traffic, 24" diameter, 400 lb.		7.80	3.077		244	123	47	414	510
2200	36" diameter, 1150 lb.		3	8		795	320	122	1,237	1,500
2300	Moss. State standard, 26" diameter, 475 lb.		7	3.429		265	138	52	455	560
2400	30" diameter, 620 lb.		7	3.429		345	138	52	535	650
2500	Watertight, 24" diameter, 350 lb.		7.80	3.077		320	123	47	490	590
2600	26" diameter, 500 lb.		7	3.429		425	138	52	615	735
2700	32" diameter, 575 lb.	▼	6	4	▼	850	160	61	1,071	1,250
2800	3 piece cover & frame, 10" deep,									
2900	1200 lb., for heavy equipment	B-6	3	8	Ea.	1,050	320	122	1,492	1,775
3000	Raised for paving 1-1/4" to 2" high									
3100	4 piece expansion ring									
3200	20" to 26" diameter	1 Clab	3	2.667	Ea.	157	97.50		254.50	325
3300	30" to 36" diameter	"	3	2.667	"	216	97.50		313.50	390
3320	Frames and covers, existing, raised for paving, 2", including									
3340	row of brick, concrete collar, up to 12" wide frame	B-6	18	1.333	Ea.	44.50	53.50	20.50	118.50	154
3360	20" to 26" wide frame		11	2.182		66.50	87.50	33	187	244
3380	30" to 36" wide frame	▼	9	2.667		82.50	107	40.50	230	300
3400	Inverts, single channel brick	D-1	3	5.333		96	220		316	440
3500	Concrete		5	3.200		103	132		235	315
3600	Triple channel, brick		2	8		147	330		477	665
3700	Concrete		3	5.333		139	220		359	485

33 46 Subdrainage

33 46 16 – Subdrainage Piping

33 46 16.25 Piping, Subdrainage, Corrugated Metal		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 PIPING, SUBDRAINAGE, CORRUGATED METAL							Labor	Equipment		
0021 Not including excavation and backfill										
2010 Aluminum, perforated										
2020	6" diameter, 18 ga.	B-20	380	.063	L.F.	6.55	2.58		9.13	11.20
2200	8" diameter, 16 ga.	"	370	.065		8.60	2.65		11.25	13.55
2220	10" diameter, 16 ga.	B-21	360	.078		10.75	3.28	.39	14.42	17.30
2240	12" diameter, 16 ga.		285	.098		12	4.15	.49	16.64	20
2260	18" diameter, 16 ga.	↓	205	.137	↓	18	5.75	.68	24.43	29.50
3000 Uncoated galvanized, perforated										
3020	6" diameter, 18 ga.	B-20	380	.063	L.F.	6.05	2.58		8.63	10.65
3200	8" diameter, 16 ga.	"	370	.065		8.35	2.65		11	13.25
3220	10" diameter, 16 ga.	B-21	360	.078		8.85	3.28	.39	12.52	15.20
3240	12" diameter, 16 ga.		285	.098		9.85	4.15	.49	14.49	17.75
3260	18" diameter, 16 ga.	↓	205	.137	↓	15.05	5.75	.68	21.48	26
4000 Steel, perforated, asphalt coated										
4020	6" diameter 18 ga.	B-20	380	.063	L.F.	6.55	2.58		9.13	11.20
4030	8" diameter 18 ga.	"	370	.065		8.60	2.65		11.25	13.55
4040	10" diameter 16 ga.	B-21	360	.078		10.10	3.28	.39	13.77	16.60
4050	12" diameter 16 ga.		285	.098		11.10	4.15	.49	15.74	19.15
4060	18" diameter 16 ga.	↓	205	.137	↓	17.15	5.75	.68	23.58	28.50

33 46 16.40 Piping, Subdrainage, Polyvinyl Chloride

0010 PIPING, SUBDRAINAGE, POLYVINYL CHLORIDE										
0020 Perforated, price as solid pipe, Section 33 31 13.25										

33 49 Storm Drainage Structures

33 49 13 – Storm Drainage Manholes, Frames, and Covers

33 49 13.10 Storm Drainage Manholes, Frames and Covers

0010 STORM DRAINAGE MANHOLES, FRAMES & COVERS										
0020 Excludes footing, excavation, backfill (See line items for frame & cover)										
0050	Brick, 4' inside diameter, 4' deep	D-1	1	16	Ea.	510	660		1,170	1,550
0100	6' deep		.70	22.857	↓	725	945		1,670	2,250
0150	8' deep		.50	32	↓	935	1,325		2,260	3,050
0200	For depths over 8', add		4	4	V.L.F.	83.50	165		248.50	345
0400	Concrete blocks (radiol), 4' I.D., 4' deep		1.50	10.667	Ea.	370	440		810	1,075
0500	6' deep		1	16	↓	495	660		1,155	1,550
0600	8' deep		.70	22.857	↓	620	945		1,565	2,125
0700	For depths over 8', add	↓	5.50	2.909	V.L.F.	65	120		185	255
0800	Concrete, cast in place, 4' x 4', 8" thick, 4' deep	C-14H	2	24	Ea.	505	1,075	16.55	1,596.55	2,250
0900	6' deep		1.50	32	↓	725	1,450	22	2,197	3,050
1000	8' deep		1	48	↓	1,050	2,175	33	3,258	4,500
1100	For depths over 8', add	↓	8	6	V.L.F.	118	271	4.14	393.14	550
1110	Precast, 4' I.D., 4' deep	B-22	4.10	7.317	Ea.	775	315	51	1,141	1,375
1120	6' deep		3	10	↓	970	425	70	1,465	1,800
1130	8' deep		2	15	↓	1,100	640	105	1,845	2,325
1140	For depths over 8', add		16	1.875	V.L.F.	125	80	13.15	218.15	275
1150	5' I.D., 4' deep	B-6	3	8	Ea.	1,625	320	122	2,067	2,400
1160	6' deep		2	12	↓	1,675	480	183	2,338	2,775
1170	8' deep		1.50	16	↓	2,350	640	244	3,234	3,850
1180	For depths over 8', add		12	2	V.L.F.	277	80	30.50	387.50	460
1190	6' I.D., 4' deep		2	12	Ea.	2,125	480	183	2,788	3,275
1200	6' deep	↓	1.50	16	↓	2,550	640	244	3,434	4,050

33 49 Storm Drainage Structures

33 49 13 – Storm Drainage Manholes, Frames, and Covers

33 49 13.10 Storm Drainage Manholes, Frames and Covers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1210	8' deep	B-6	1	24	Eq.	3,150	965	365	4,480	5,325
1220	For depths over 8', add	▼	8	3	V.L.F.	375	120	45.50	540.50	645
1250	Slab tops, precast, 8" thick									
1300	4' diameter manhole	B-6	8	3	Eq.	245	120	45.50	410.50	505
1400	5' diameter manhole		7.50	3.200		405	128	48.50	581.50	695
1500	6' diameter manhole	▼	7	3.429		625	138	52	815	955
3800	Steps, heavyweight cast iron, 7" x 9"	1 Bric	40	.200		19.05	9.10		28.15	35
3900	8" x 9"		40	.200		23	9.10		32.10	39
3928	12" x 10-1/2"		40	.200		26.50	9.10		35.60	43.50
4000	Standard sizes, galvanized steel		40	.200		21.50	9.10		30.60	37.50
4100	Aluminum		40	.200		24	9.10		33.10	40
4150	Polyethylene	▼	40	.200	▼	24.50	9.10		33.60	41

33 51 Natural-Gas Distribution

33 51 13 – Natural-Gas Piping

33 51 13.10 Piping, Gas Service and Distribution, P.E.

0010	PIPING, GAS SERVICE AND DISTRIBUTION, POLYETHYLENE									
0020	Nat including excavation or backfill									
1000	60 psi coils, compression coupling @ 100', 1/2" diameter, SDR 11	B-20A	608	.053	L.F.	.61	2.35		2.96	4.26
1010	1" diameter, SDR 11		544	.059		1.41	2.63		4.04	5.55
1040	1-1/4" diameter, SDR 11		544	.059		1.76	2.63		4.39	5.95
1100	2" diameter, SDR 11		488	.066		2.85	2.93		5.78	7.60
1160	3" diameter, SDR 11	▼	408	.078		5.60	3.51		9.11	11.50
1500	60 PSI 40' joints with coupling, 3" diameter, SDR 11	B-21A	408	.098		5.55	4.49	1.18	11.22	14.25
1540	4" diameter, SDR 11		352	.114		12.15	5.20	1.37	18.72	23
1600	6" diameter, SDR 11		328	.122		33.50	5.60	1.47	40.57	47
1640	8" diameter, SDR 11	▼	272	.147	▼	51.50	6.75	1.77	60.02	68.50

33 52 Liquid Fuel Distribution

33 52 16 – Gasoline Distribution

33 52 16.13 Gasoline Piping

0010	GASOLINE PIPING									
0020	Primary containment pipe, fiberglass-reinforced									
0030	Plastic pipe 15' & 30' lengths									
0040	2" diameter	Q-6	425	.056	L.F.	5.95	3.08		9.03	11.20
0050	3" diameter		400	.060		10.40	3.28		13.68	16.35
0060	4" diameter	▼	375	.064	▼	13.70	3.49		17.19	20.50
0100	Fittings									
0110	Elbows, 90° & 45°, bellends, 2"	Q-6	24	1	Eq.	43.50	54.50		98	130
0120	3" diameter		22	1.091		55	59.50		114.50	151
0130	4" diameter		20	1.200		70	65.50		135.50	176
0200	Tees, bell ends, 2"		21	1.143		60.50	62.50		123	161
0210	3" diameter		18	1.333		64	73		137	181
0220	4" diameter		15	1.600		84	87.50		171.50	225
0230	Flanges bell ends, 2"		24	1		33.50	54.50		88	120
0240	3" diameter		22	1.091		39	59.50		98.50	133
0250	4" diameter		20	1.200		45	65.50		110.50	149
0260	Sleeve couplings, 2"		21	1.143		12.40	62.50		74.90	108
0270	3" diameter		18	1.333		17.80	73		90.80	130

33 52 Liquid Fuel Distribution

33 52 16 – Gasoline Distribution

33 52 16.13 Gasoline Piping		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0280	4" diameter	Q-6	15	1.600	Ea.	23	87.50		110.50	158
0290	Threaded adapters 2"		21	1.143		18	62.50		80.50	114
0300	3" diameter		18	1.333		34	73		107	148
0310	4" diameter		15	1.600		38	87.50		125.50	174
0320	Reducers, 2"		27	.889		27.50	48.50		76	104
0330	3" diameter		22	1.091		27.50	59.50		87	120
0340	4" diameter		20	1.200		37	65.50		102.50	140
1010	Gas station product line for secondary containment (double wall)									
1100	Fiberglass reinforced plastic pipe 25' lengths									
1120	Pipe, plain end, 3" diameter	Q-6	375	.064	L.F.	26.50	3.49		29.99	35
1130	4" diameter		350	.069		32	3.74		35.74	41
1140	5" diameter		325	.074		35.50	4.03		39.53	45
1150	6" diameter		300	.080		39	4.37		43.37	49.50
1200	Fittings									
1230	Elbows, 90° & 45°, 3" diameter	Q-6	18	1.333	Ea.	136	73		209	260
1240	4" diameter		16	1.500		167	82		249	310
1250	5" diameter		14	1.714		184	93.50		277.50	345
1260	6" diameter		12	2		204	109		313	390
1270	Tees, 3" diameter		15	1.600		166	87.50		253.50	315
1280	4" diameter		12	2		202	109		311	385
1290	5" diameter		9	2.667		315	146		461	570
1300	6" diameter		6	4		375	218		593	745
1310	Couplings, 3" diameter		18	1.333		55	73		128	171
1320	4" diameter		16	1.500		119	82		201	255
1330	5" diameter		14	1.714		214	93.50		307.50	375
1340	6" diameter		12	2		315	109		424	515
1350	Cross-over nipples, 3" diameter		18	1.333		10.60	73		83.60	122
1360	4" diameter		16	1.500		12.75	82		94.75	138
1370	5" diameter		14	1.714		15.90	93.50		109.40	159
1380	6" diameter		12	2		19.10	109		128.10	186
1400	Telescoping, reducers, concentric 4" x 3"		18	1.333		47.50	73		120.50	163
1410	5" x 4"		17	1.412		95.50	77		172.50	221
1420	6" x 5"		16	1.500		234	82		316	380

33 71 Electrical Utility Transmission and Distribution

33 71 16 – Electrical Utility Poles

33 71 16.33 Wood Electrical Utility Poles

0010	WOOD ELECTRICAL UTILITY POLES									
0011	Excludes excavation, backfill and cast-in-place concrete									
6200	Electric & tel sitework, 20' high, treated wd., see Section 26 56 13.10	R-3	3.10	6.452	Ea.	223	340	45	608	805
6400	25' high		2.90	6.897		263	365	48.50	676.50	895
6600	30' high		2.60	7.692		430	405	54	889	1,150
6800	35' high		2.40	8.333		495	440	58.50	993.50	1,275
7000	40' high		2.30	8.696		710	460	61	1,231	1,525
7200	45' high		1.70	11.765		865	625	82.50	1,572.50	1,975
7400	Cross arms with hardware & insulators									
7600	4' long	1 Elec	2.50	3.200	Ea.	148	171		319	420
7800	5' long		2.40	3.333		170	178		348	455
8000	6' long		2.20	3.636		165	194		359	470

33 71 Electrical Utility Transmission and Distribution

33 71 19 – Electrical Underground Ducts and Manholes

33 71 19.17 Electric and Telephone Underground		Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	ELECTRIC AND TELEPHONE UNDERGROUND									
0011	Not including excavation									
0200	backfill and cast in place concrete									
0400	Hand holes, precast concrete, with concrete cover									
0600	2' x 2' x 3' deep	R-3	2.40	8.333	Ea.	415	440	58.50	913.50	1,175
0800	3' x 3' x 3' deep		1.90	10.526		535	555	73.50	1,163.50	1,500
1000	4' x 4' x 4' deep	▼	1.40	14.286	▼	1,200	755	100	2,055	2,525
1200	Manholes, precast with iron racks & pulling irons, C.I. frame									
1400	and cover, 4' x 6' x 7' deep	B-13	2	28	Ea.	5,925	1,125	375	7,425	8,625
1600	6' x 8' x 7' deep		1.90	29.474		6,650	1,175	395	8,220	9,550
1800	6' x 10' x 7' deep	▼	1.80	31.111	▼	7,450	1,250	415	9,115	10,600
4200	Underground duct, banks ready for concrete fill, min. of 7.5"									
4400	between conduits, center to center									
4580	PVC, type EB, 1 @ 2" diameter	2 Elec	480	.033	L.F.	.72	1.78		2.50	3.46
4600	2 @ 2" diameter		240	.067		1.45	3.56		5.01	6.90
4800	4 @ 2" diameter		120	.133		2.90	7.10		10	13.85
5000	2 @ 3" diameter		200	.080		1.98	4.27		6.25	8.55
5200	4 @ 3" diameter		100	.160		3.95	8.55		12.50	17.15
5400	2 @ 4" diameter		160	.100		3.03	5.35		8.38	11.35
5600	4 @ 4" diameter		80	.200		6.05	10.65		16.70	22.50
5800	6 @ 4" diameter		54	.296		9.10	15.80		24.90	33.50
6200	Rigid galvanized steel, 2 @ 2" diameter		180	.089		12.10	4.74		16.84	20.50
6400	4 @ 2" diameter		90	.178		24	9.50		33.50	40.50
6800	2 @ 3" diameter		100	.160		27.50	8.55		36.05	43
7000	4 @ 3" diameter		50	.320		55	17.05		72.05	86
7200	2 @ 4" diameter		70	.229		40	12.20		52.20	62.50
7400	4 @ 4" diameter		34	.471		80	25		105	126
7600	6 @ 4" diameter	▼	22	.727	▼	120	39		159	190

33 81 Communications Structures

33 81 13 -- Communications Transmission Towers

33 81 13.10 Radio Towers

0010	RADIO TOWERS									
0020	Guyed, 50' H, 40 lb. sect., 70 MPH basic wind spd.	2 Sswk	1	16	Ea.	2,750	820		3,570	4,475
0100	Wind load 90 MPH basic wind speed	"	1	16		3,700	820		4,520	5,525
0300	190' high, 40 lb. section, wind load 70 MPH basic wind speed	K-2	.33	72.727		9,550	3,400	1,000	13,950	17,400
0400	200' high, 70 lb. section, wind load 90 MPH basic wind speed		.33	72.727		15,900	3,400	1,000	20,300	24,400
0600	300' high, 70 lb. section, wind load 70 MPH basic wind speed		.20	120		25,500	5,625	1,675	32,800	39,400
0700	270' high, 90 lb. section, wind load 90 MPH basic wind speed		.20	120		27,600	5,625	1,675	34,900	41,700
0800	400' high, 100 lb. section, wind load 70 MPH basic wind speed		.14	171		38,100	8,050	2,375	48,525	58,000
0900	Self-supporting, 60' high, wind load 70 MPH basic wind speed		.80	30		4,500	1,400	415	6,315	7,800
0910	60' high, wind load 90 MPH basic wind speed		.45	53.333		5,275	2,500	740	8,515	10,900
1000	120' high, wind load 70 MPH basic wind speed		.40	60		10,000	2,825	835	13,660	16,700
1200	190' high, wind load 90 MPH basic wind speed	▼	.20	120	▼	28,300	5,625	1,675	35,600	42,500
2000	Far states west of Rocky Mountains, add for shipping					10%				

Division Notes

[illegible]

Estimating Tips

34 11 00 Rail Tracks

This subdivision includes items that may involve either repair of existing, or construction of new, railroad tracks. Additional preparation work, such as the roadbed earthwork, would be found in Division 31. Additional new construction siding and turnouts are found in Subdivision 34 72. Maintenance of railroads is found under 34 01 23 Operation and Maintenance of Railways.

34 40 00 Traffic Signals

This subdivision includes traffic signal systems. Other traffic control devices such as traffic signs are found in Subdivision 10 14 53 Traffic Signage.

34 70 00 Vehicle Barriers

This subdivision includes security vehicle barriers, guide and guard rails, crash barriers, and delineators. The actual maintenance and construction of concrete and asphalt pavement is found in Division 32.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

34 01 Operation and Maintenance of Transportation

34 01 23 – Operation and Maintenance of Railways

34 01 23.51 Maintenance of Railroads				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
0010 MAINTENANCE OF RAILROADS									Labor	Equipment		
0400	Resurface and realign existing track			B-14	200	.240	L.F.		9.30	1.83	11.13	16.30
0600	For crushed stone ballast, add			"	500	.096	"	11.40	3.72	.73	15.85	19.05

34 11 Rail Tracks

34 11 13 – Track Rails

34 11 13.23 Heavy Rail Track

0010	HEAVY RAIL TRACK			R347216-10								
1000	Rail, 100 lb. prime grade						L.F.	35			35	38
1500	Relay rail						"	17.40			17.40	19.10

34 11 33 – Track Cross Ties

34 11 33.13 Concrete Track Cross Ties

0010	CONCRETE TRACK CROSS TIES											
1400	Ties, concrete, 8'-6" long, 30" O.C.			B-14	80	.600	Ea.	172	23	4.57	199.57	230

34 11 33.16 Timber Track Cross Ties

0010	TIMBER TRACK CROSS TIES											
1600	Wood, pressure treated, 6" x 8" x 8'-6", C.L. lots			B-14	90	.533	Ea.	51.50	20.50	4.06	76.06	93.50
1700	L.C.L. lots				90	.533		54	20.50	4.06	78.56	96
1900	Heavy duty, 7" x 9" x 8'-6", C.L. lots				70	.686		57	26.50	5.20	88.70	109
2000	L.C.L. lots			▼	70	.686	▼	57	26.50	5.20	88.70	109

34 11 33.17 Timber Switch Ties

0010	TIMBER SWITCH TIES											
1200	Switch timber, for a #8 switch, pressure treated			B-14	3.70	12.973	M.B.F.	3,100	500	98.50	3,698.50	4,275
1300	Complete set of timbers, 3.7 MBF for #8 switch			"	1	48	Total	11,900	1,850	365	14,115	16,400

34 11 93 – Track Appurtenances and Accessories

34 11 93.50 Track Accessories

0010	TRACK ACCESSORIES											
0020	Car bumpers, test			B-14	2	24	Ea.	3,875	930	183	4,988	5,900
0100	Heavy duty				2	24		7,350	930	183	8,463	9,700
0200	Derails hand throw (sliding)				10	4.800		1,225	186	36.50	1,447.50	1,675
0300	Hand throw with standard timbers, open stand & target				8	6	▼	1,325	232	45.50	1,602.50	1,850
2400	Wheel stops, fixed				18	2.667	Pr.	955	103	20.50	1,078.50	1,225
2450	Hinged			▼	14	3.429	"	1,300	133	26	1,459	1,650

34 11 93.60 Track Material

0010	TRACK MATERIAL											
0020	Track balts						Ea.	3.98			3.98	4.38
0100	Joint bars						Pr.	92.50			92.50	101
0200	Spikes						Ea.	1.31			1.31	1.44
0300	Tie plates						"	15.45			15.45	16.95

34 41 Roadway Signaling and Control Equipment

34 41 13 – Traffic Signals

34 41 13.10 Traffic Signals Systems		Daily Crew	Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	TRAFFIC SIGNALS SYSTEMS									
0020	Mid black pedestrian crosswalk with pushbutton and most arms	R-11	.30	186	Total	68,000	9,450	2,950	80,400	92,500
0600	Traffic signals, school flashing system, solar powered, remote controlled	"	1	56	Signal	12,000	2,825	890	15,715	18,400
1000	Intersection traffic signals, LED, most, programmable, no lone control									
1010	Includes all labor, material and equip. for complete installation	R-11	1	56	Signal	158,000	2,825	890	161,715	179,000
1100	Intersection traffic signals, LED, most, programmable, R/L lone control									
1110	Includes all labor, material and equip. for complete installation	R-11	1	56	Signal	216,000	2,825	890	219,715	242,500
1200	Add protective/permissive left turns to existing traffic light									
1210	Includes all labor, material and equip. for complete installation	R-11	1	56	Signal	66,000	2,825	890	69,715	77,500
1300	Replace existing light heads with LED heads wire hung									
1310	Includes all labor, material and equip. for complete installation	R-11	1	56	Signal	41,000	2,825	890	44,715	50,500
1400	Replace existing light heads with LED heads most arm hung									
1410	Includes all labor, material and equip. for complete installation	R-11	1	56	Signal	77,000	2,825	890	80,715	89,500

34 71 Roadway Construction

34 71 13 – Vehicle Barriers

34 71 13.17 Security Vehicle Barriers

0010	SECURITY VEHICLE BARRIERS									
0020	Security planters excludes filling material									
0100	Concrete security planter, exposed aggregate 36" diam. x 30" high	B-11M	8	2	Ea.	540	85.50	49.50	675	780
0200	48" diam. x 36" high		8	2		810	85.50	49.50	945	1,075
0300	53" diam. x 18" high		8	2		875	85.50	49.50	1,010	1,150
0400	72" diam. x 18" high with seats		8	2		2,150	85.50	49.50	2,285	2,550
0450	84" diam. x 36" high		8	2		2,275	85.50	49.50	2,410	2,675
0500	36" x 36" x 24" high square		8	2		490	85.50	49.50	625	725
0600	36" x 36" x 30" high square		8	2		800	85.50	49.50	935	1,075
0700	48" L x 24" W x 30" H rectangle		8	2		485	85.50	49.50	620	720
0800	72" L x 24" W x 30" H rectangle		8	2		595	85.50	49.50	730	840
0900	96" L x 24" W x 30" H rectangle		8	2		755	85.50	49.50	890	1,025
0950	Decorative geometric concrete barrier, 96" L x 24" W x 36" H		8	2		805	85.50	49.50	940	1,075
1000	Concrete security planter, filling with washed sand or gravel <1 C.Y.		8	2		40	85.50	49.50	175	230
1050	2 C.Y. or less	▼	6	2.667		80	114	66.50	260.50	335
1200	Jersey concrete barrier, 10' L x 2' by 0.5' W x 30" H	B-21B	16	2.500		350	99.50	41.50	491	585
1300	10 or more same site		24	1.667		350	66.50	27.50	444	520
1400	10' L x 2' by 0.5' W x 32" H		16	2.500		370	99.50	41.50	511	605
1500	10 or more same site		24	1.667		370	66.50	27.50	464	540
1600	20' L x 2' by 0.5' W x 30" H		12	3.333		525	133	55.50	713.50	845
1700	10 or more same site		18	2.222		525	88.50	37	650.50	755
1800	20' L x 2' by 0.5' W x 32" H		12	3.333		640	133	55.50	828.50	970
1900	10 or more same site		18	2.222		640	88.50	37	765.50	880
2000	GFRC decorative security barrier per 10 feet section including concrete		4	10		2,400	400	166	2,966	3,450
2100	Per 12 feet section including concrete		4	10		2,900	400	166	3,466	3,975
2210	GFRC decorative security barrier will stop 30 MPH, 4000 lb. vehicle									
2300	High security barrier base prep per 12 feet section on bore ground	B-11C	4	4	Ea.	26	171	91.50	288.50	390
2310	GFRC barrier base prep does not include haul away of excavated matl.									
2400	GFRC decorative high security barrier per 12 feet section w/concrete	B-21B	3	13.333	Ea.	5,800	530	221	6,551	7,450
2410	GFRC decorative high security barrier will stop 50 MPH, 15000 lb. vehicle									
2500	GFRC decorative impaler security barrier per 10 feet section w/prep	B-6	4	6	Ea.	2,200	241	91.50	2,532.50	2,900
2600	Per 12 feet section w/prep	"	4	6	"	2,650	241	91.50	2,982.50	3,400
2610	Impaler barrier should stop 50 MPH, 15000 lb. vehicle w/some penetr.									
2700	Pipe ballards, steel, concrete filled/pointed, 8' L x 4' D hole, 8" diam.	B-6	10	2.400	Ea.	825	96.50	36.50	958	1,100

34 71 Roadway Construction

34 71 13 – Vehicle Barriers

34 71 13.17 Security Vehicle Barriers		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2710	Schedule 80 concrete bollards will stop 4000 lb. vehicle @ 30 MPH									
2800	GFRC decorative jersey barrier cover per 10 feet section excludes sail	B-6	8	3	Eo.	945	120	45.50	1,110.50	1,275
2900	Per 12 feet section excludes soil		8	3		1,125	120	45.50	1,290.50	1,475
3000	GFRC decorative 8" diameter bollard cover		12	2		505	80	30.50	615.50	710
3100	GFRC decorative barrier face 10 foot section excludes earth backing	▼	10	2.400	▼	1,050	96.50	36.50	1,183	1,350
3200	Drop arm crash barrier, 15000 lb. vehicle @ 50 MPH									
3205	Includes all material, labor for complete installation									
3210	12' width				Eo.				64,500	71,000
3310	24' width								86,000	95,000
3410	Wedge crash barrier, 10' width								98,000	108,000
3510	12.5' width								108,000	119,000
3520	15' width								118,500	130,000
3610	Sliding crash barrier, 12' width								178,500	196,000
3710	Sliding roller crash barrier, 20' width								198,000	217,500
3810	Sliding cantilever crash barrier, 20' width				▼				198,000	217,500
3890	Note: Raised bollard crash barriers should be used w/tire shredders									
3910	Raised bollard crash barrier, 10' width				Eo.				38,800	42,900
4010	12' width								44,900	49,000
4110	Raised bollard crash barrier, 10' width, solar powered								46,900	52,000
4210	12' width								53,000	58,000
4310	In ground tire shredder, 16' width				▼				43,900	47,900

34 71 13.26 Vehicle Guide Rails

0010 VEHICLE GUIDE RAILS										
0012	Corrugated stl., galv. stl. posts, 6'-3" O.C.	B-80	850	.038	L.F.	21.50	1.50	.89	23.89	27.50
0200	End sections, galvanized, flared		50	.640	Eo.	94	25.50	15.15	134.65	160
0300	Wrap around end		50	.640	"	137	25.50	15.15	177.65	207
0400	Timber guide rail, 4" x 8" with 6" x 8" wood posts, treated		960	.033	L.F.	11.80	1.32	.79	13.91	15.90
0600	Cable guide rail, 3 or 3/4" cables, steel posts, single face		900	.036		10.60	1.41	.84	12.85	14.75
0700	Wood posts		950	.034		12.70	1.34	.80	14.84	16.90
0900	Guide rail, steel box beam, 6" x 6"		120	.267		33	10.60	6.30	49.90	59.50
1100	Median barrier, steel box beam, 6" x 8"		215	.149		44	5.90	3.53	53.43	61.50
1400	Resilient guide fence and light shield, 6' high	B-2	130	.308	▼	37.50	11.40		48.90	58.50
1500	Concrete posts, individual, 6'-5", triangular	B-80	110	.291	Eo.	71	11.55	6.90	89.45	104
1550	Square	"	110	.291	"	76.50	11.55	6.90	94.95	110
2000	Median, precast concrete, 3'-6" high, 2' wide, single face	B-29	380	.147	L.F.	53	5.85	2.32	61.17	70
2200	Double face	"	340	.165	"	61	6.55	2.59	70.14	80
2400	Speed bumps, thermoplastic, 10-1/2" x 2-1/4" x 48" long	B-2	120	.333	Eo.	135	12.35		147.35	168
3030	Impact barrier, UTMCD, barrel type	B-16	30	1.067	"	500	40	23	563	635

34 71 19 – Vehicle Delineators

34 71 19.13 Fixed Vehicle Delineators

0010 FIXED VEHICLE DELINEATORS										
0020	Crash barriers									
0100	Traffic channelizing pavement markers, layout only	A-7	2000	.012	Eo.		.61	.04	.65	.97
0110	13" x 7-1/2" x 2-1/2" high, non-plowable install	2 Clob	96	.167		24	6.10		30.10	35.50
0200	8" x 8" x 3-1/4" high, non-plowable, install		96	.167		22.50	6.10		28.60	34
0230	4" x 4" x 3/4" high, non-plowable, install	▼	120	.133		1.75	4.89		6.64	9.50
0240	9-1/4" x 5-7/8" x 1/4" high, plowable, concrete povmt.	A-2A	70	.343		17.85	12.55	6.35	36.75	46
0250	9-1/4" x 5-7/8" x 1/4" high, plowable, asphalt pov't	"	120	.200		3.75	7.30	3.71	14.76	19.45
0300	Barrier and curb delineators, reflectarized, 2" x 4"	2 Clob	150	.107		2	3.91		5.91	8.25
0310	3" x 5"	"	150	.107		3.90	3.91		7.81	10.35
0500	Rumble strip, polycarbonate									
0510	24" x 3-1/2" x 1/2" high	2 Clob	50	.320	Eo.	8.25	11.75		20	27

34 72 Railway Construction

34 72 16 – Railway Siding

34 72 16.50 Railroad Sidings				Daily Crew	Labor- Output	Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	RAILROAD SIDINGS											
			R347216-10									
0800	Siding, yard spur, level grade											
0820	100 lb. new rail			B-14	57	.842	L.F.	129	32.50	6.40	167.90	198
1002	Steel ties in concrete, incl. fasteners & plates											
1020	100 lb. new rail			B-14	22	2.182	L.F.	179	84.50	16.60	280.10	345

34 72 16.60 Railroad Turnouts

0010	RAILROAD TURNOUTS											
2200	Turnout, #8 complete, w/rails, plates, bars, frag, switch point,											
2250	timbers, and ballast to 6" below bottom of ties											
2280	90 lb. rails			B-13	.25	224	Ea.	39,900	8,925	2,975	51,800	61,000
2290	90 lb. relay rails				.25	224		26,800	8,925	2,975	38,700	46,500
2300	100 lb. rails				.25	224		44,500	8,925	2,975	56,400	66,000
2310	100 lb. relay rails				.25	224		29,900	8,925	2,975	41,800	49,900
2320	110 lb. rails				.25	224		49,000	8,925	2,975	60,900	71,000
2330	110 lb. relay rails				.25	224		33,000	8,925	2,975	44,900	53,500
2340	115 lb. rails				.25	224		53,500	8,925	2,975	65,400	76,000
2350	115 lb. relay rails				.25	224		35,800	8,925	2,975	47,700	56,500
2360	132 lb. rails				.25	224		61,500	8,925	2,975	73,400	84,500
2370	132 lb. relay rails			▼	.25	224	▼	40,700	8,925	2,975	52,600	61,500

Division Notes

[illegible]

Estimating Tips

35 01 50 Operation and Maintenance of Marine Construction

Includes unit price lines for pile cleaning and pile wrapping for protection.

35 20 16 Hydraulic Gates

This subdivision includes various types of gates that are commonly used in waterway and canal construction. Various earthwork items and structural support is found in Division 31, and concrete work in Division 3.

35 20 23 Dredging

This subdivision includes barge and shore dredging systems for rivers, canals, and channels.

35 31 00 Shoreline Protection

This subdivision includes breakwaters, bulkheads, and revetments for ocean and river inlets. Additional earthwork may be required from Division 31, and concrete work from Division 3.

35 41 00 Levees

Information on levee construction, including estimated cost of clay cone material.

35 49 00 Waterway Structures

This subdivision includes breakwaters and bulkheads for canals.

35 51 00 Floating Construction

This section includes floating piers, docks, and dock accessories. Fixed Pier Timber Construction is found in 06 13 33. Driven piles are found in Division 31, as well as sheet piling, cofferdams, and riprap.

Reference Numbers

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35 20 Waterway and Marine Construction and Equipment

35 20 23 – Dredging

35 20 23.13 Mechanical Dredging

0010	MECHANICAL DREDGING	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0020	Dredging mobilization and demobilization, add to below, minimum	B-8	.53	120	Total		4,950	6,275	11,225	14,500
0100	Maximum	"	.10	640	"		26,300	33,200	59,500	76,500
0300	Barge mounted clamshell excavation into scaws									
0310	Dumped 20 miles at sea, minimum	B-57	310	.155	B.C.Y.		6.50	5.45	11.95	15.95
0400	Maximum	"	213	.225	"		9.50	7.95	17.45	23.50
0500	Barge mounted dragline or clamshell, happer dumped, pumped 1000' to shore dump, minimum	B-57	340	.141	B.C.Y.		5.95	4.99	10.94	14.60
0510										
0525	All pumping uses 2000 gallons of water per cubic yard									
0600	Maximum	B-57	243	.198	B.C.Y.		8.30	6.95	15.25	20.50

35 20 23.23 Hydraulic Dredging

0010	HYDRAULIC DREDGING									
1000	Hydraulic method, pumped 1000' to shore dump, minimum	B-57	460	.104	B.C.Y.		4.40	3.68	8.08	10.75
1100	Maximum		310	.155			6.50	5.45	11.95	15.95
1400	Into scaws dumped 20 miles, minimum		425	.113			4.76	3.99	8.75	11.65
1500	Maximum	↓	243	.198			8.30	6.95	15.25	20.50
1600	Far inland rivers and canals in South, deduct								30%	30%

35 51 Floating Construction

35 51 13 – Floating Piers

35 51 13.23 Floating Wood Piers

0010	FLOATING WOOD PIERS									
0020	Polyethylene encased polystyrene, no pilings included	F-3	330	.121	S.F.	28.50	5.65	2.01	36.16	42
0200	Pile supported, shore constructed, bare, 3" decking		130	.308		27.50	14.40	5.10	47	57.50
0250	4" decking		120	.333		28.50	15.60	5.55	49.65	61
0400	Floating, small boat, prefab, no shore facilities, minimum		250	.160		24	7.50	2.65	34.15	41
0500	Maximum		150	.267	↓	51	12.45	4.42	67.87	80
0700	Per slip, minimum (180 S.F. each)		1.59	25.157	Ea.	4,900	1,175	415	6,490	7,625
0800	Maximum	↓	1.40	28.571	"	8,250	1,325	475	10,050	11,600

Estimating Tips

Products such as conveyors, material handling cranes and hoists, as well as other items specified in this division, require trained installers. The general contractor may not have any choice as to who will perform the installation or when it will be performed. Long lead times are often required for these products, making early decisions in purchasing and scheduling necessary.

The installation of this type of equipment may require the embedment of mounting hardware during construction of floors, structural walls, or interior walls/partitions. Electrical connections will require coordination with the electrical contractor.

Reference Numbers

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41 21 Conveyors

41 21 23 – Piece Material Conveyors

41 21 23.16 Container Piece Material Conveyors

		Crew	Doily Output	Labor- Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	CONTAINER PIECE MATERIAL CONVEYORS									
0020	Gravity fed, 2" rollers, 3" O.C.									
0050	10' sections with 2 supports, 600 lb. capacity, 18" wide				Ea.	450			450	495
0100	24" wide					515			515	570
0150	1400 lb. capacity, 18" wide					415			415	455
0200	24" wide					460			460	505
0350	Horizontal belt, center drive and takeup, 60 fpm									
0400	16" belt, 26.5' length	2 Mill	.50	32	Ea.	3,150	1,550		4,700	5,750
0450	24" belt, 41.5' length		.40	40		4,900	1,925		6,825	8,200
0500	61.5' length		.30	53.333		6,525	2,575		9,100	11,000
0600	Inclined belt, 10' rise with horizontal loader and									
0620	End idler assembly, 27.5' length, 18" belt	2 Mill	.30	53.333	Ea.	7,700	2,575		10,275	12,300
0700	24" belt	"	.15	106	"	8,600	5,125		13,725	17,000
3600	Manarail, overhead, manual, channel type									
3700	125 lb. per L.F.	1 Mill	26	.308	L.F.	14.45	14.80		29.25	38
3900	500 lb. per L.F.	"	21	.381	"	20.50	18.30		38.80	49.50
4000	Trolleys for above, 2 wheel, 125 lb. capacity				Ea.	74			74	81.50
4200	4 wheel, 250 lb. capacity					290			290	320
4300	8 wheel, 500 lb. capacity					675			675	745

41 22 Cranes and Hoists

41 22 13 – Cranes

41 22 13.10 Crane Rail

0010	CRANE RAIL									
0020	Box beam bridge, no equipment included	E-4	3400	.009	Lb.	1.33	.49	.04	1.86	2.37
0200	Running track only, 104 lb. per yard	"	5600	.006	"	.66	.29	.03	.98	1.28

41 22 13.13 Bridge Cranes

0010	BRIDGE CRANES									
0100	1 girder, 20' span, 3 ton	M-3	1	34	Ea.	24,100	1,900	140	26,140	29,500
0125	5 ton		1	34		26,400	1,900	140	28,440	32,100
0150	7.5 ton		1	34		31,400	1,900	140	33,440	37,600
0175	10 ton		.80	42.500		41,600	2,375	175	44,150	49,600
0200	15 ton		.80	42.500		53,500	2,375	175	56,050	63,000
0225	30' span, 3 ton		1	34		25,100	1,900	140	27,140	30,600
0250	5 ton		1	34		27,600	1,900	140	29,640	33,300
0275	7.5 ton		1	34		33,000	1,900	140	35,040	39,300
0300	10 ton		.80	42.500		43,000	2,375	175	45,550	51,000
0325	15 ton		.80	42.500		56,000	2,375	175	58,550	65,500
0350	2 girder, 40' span, 3 ton	M-4	.50	72		41,300	3,975	355	45,630	52,000
0375	5 ton		.50	72		43,300	3,975	355	47,630	54,000
0400	7.5 ton		.50	72		47,500	3,975	355	51,830	58,500
0425	10 ton		.40	90		55,500	4,975	445	60,920	69,000
0450	15 ton		.40	90		75,500	4,975	445	80,920	91,000
0475	25 ton		.30	120		89,500	6,625	595	96,720	108,500
0500	50' span, 3 ton		.50	72		47,100	3,975	355	51,430	58,500
0525	5 ton		.50	72		49,000	3,975	355	53,330	60,500
0550	7.5 ton		.50	72		52,500	3,975	355	56,830	64,000
0575	10 ton		.40	90		60,500	4,975	445	65,920	74,500
0600	15 ton		.40	90		79,000	4,975	445	84,420	95,000
0625	25 ton		.30	120		93,500	6,625	595	100,720	113,500

41 22 Cranes and Hoists

41 22 13 – Cranes

41 22 13.19 Jib Cranes					Crew	Daily Output	Labor- Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
										Labor	Equipment		
0010	JIB CRANES												
0020	Jib crane, wall cantilever, 500 lb. capacity, 8' span				2 Mill	1	16	Ea.	1,400	770		2,170	2,650
0040	12' span					1	16		1,525	770		2,295	2,800
0060	16' span					1	16		1,700	770		2,470	3,000
0080	20' span					1	16		2,150	770		2,920	3,500
0100	1000 lb. capacity, 8' span					1	16		1,500	770		2,270	2,775
0120	12' span					1	16		1,625	770		2,395	2,925
0130	16' span					1	16		2,150	770		2,920	3,500
0150	20' span					1	16		2,525	770		3,295	3,900

41 22 23 – Hoists

41 22 23.10 Material Handling													
0010	MATERIAL HANDLING , cranes, hoists and lifts												
1500	Cranes, portable hydraulic, floor type, 2,000 lb. capacity							Ea.	3,500			3,500	3,875
1600	4,000 lb. capacity								4,025			4,025	4,425
1800	Movable gantry type, 12' to 15' range, 2,000 lb. capacity								2,050			2,050	2,250
1900	6,000 lb. capacity								4,825			4,825	5,300
2100	Hoists, electric overhead, chain, hook hung, 15' lift, 1 ton cap.								2,875			2,875	3,175
2200	3 ton capacity								3,375			3,375	3,725
2500	5 ton capacity								7,800			7,800	8,575
2600	For hand-pushed trolley, add								15%				
2700	For geared trolley, add								30%				
2800	For motor trolley, add								75%				
3000	For lifts over 15', 1 ton, add							L.F.	25			25	27.50
3100	5 ton, add							"	52			52	57
3300	Lifts, scissor type, portable, electric, 36" high, 2,000 lb.							Ea.	3,475			3,475	3,825
3400	48" high, 4,000 lb.							"	4,175			4,175	4,600

Division Notes

[illegible]

Estimating Tips

This section involves equipment and construction costs for air noise and odor pollution control systems.

These systems may be interrelated and care must be taken that the complete systems are estimated. For example, air pollution equipment may include dust and air-entrained particles that have to be collected. The vacuum systems could be noisy, requiring silencers to reduce noise pollution, and the collected solids have to be disposed of to prevent solid pollution.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

44 11 Particulate Control Equipment

44 11 16 – Fugitive Dust Barrier Systems

44 11 16.10 Dust Collection Systems					Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
										Labor	Equipment		
0010	DUST COLLECTION SYSTEMS Commercial/Industrial												
0120	Central vacuum units												
0130	Includes stand, filters and motorized shaker												
0200	500 CFM, 10" inlet, 2 HP				Q-20	2.40	8.333	Eq.	4,175	415		4,590	5,225
0220	1000 CFM, 10" inlet, 3 HP					2.20	9.091		4,400	455		4,855	5,525
0240	1500 CFM, 10" inlet, 5 HP					2	10		4,625	500		5,125	5,850
0260	3000 CFM, 13" inlet, 10 HP					1.50	13.333		12,900	665		13,565	15,200
0280	5000 CFM, 16" inlet, 2 @ 10 HP				▼	1	20	▼	13,700	1,000		14,700	16,600
1000	Vacuum tubing, galvanized												
1100	2-1/8" OD, 16 ga.				Q-9	440	.036	L.F.	2.95	1.79		4.74	6
1110	2-1/2" OD, 16 ga.					420	.038		3.24	1.88		5.12	6.40
1120	3" OD, 16 ga.					400	.040		4.13	1.97		6.10	7.55
1130	3-1/2" OD, 16 ga.					380	.042		5.85	2.07		7.92	9.60
1140	4" OD, 16 ga.					360	.044		6	2.19		8.19	9.95
1150	5" OD, 14 ga.					320	.050		10.80	2.46		13.26	15.60
1160	6" OD, 14 ga.					280	.057		12.10	2.81		14.91	17.60
1170	8" OD, 14 ga.					200	.080		18.30	3.94		22.24	26
1180	10" OD, 12 ga.					160	.100		35.50	4.92		40.42	46.50
1190	12" OD, 12 ga.					120	.133		47	6.55		53.55	61.50
1200	14" OD, 12 ga.				▼	80	.200	▼	53.50	9.85		63.35	73.50
1940	Hose, flexible wire reinforced rubber												
1956	3" diam.				Q-9	400	.040	L.F.	8.95	1.97		10.92	12.85
1960	4" diam.					360	.044		10.35	2.19		12.54	14.75
1970	5" diam.					320	.050		13.50	2.46		15.96	18.60
1980	6" diam.				▼	280	.057	▼	14.10	2.81		16.91	19.80
2000	90° Elbow, slip fit												
2110	2-1/8" diam.				Q-9	70	.229	Eq.	10.85	11.25		22.10	29
2120	2-1/2" diam.					65	.246		15.20	12.10		27.30	35
2130	3" diam.					60	.267		20.50	13.15		33.65	42.50
2140	3-1/2" diam.					55	.291		25.50	14.30		39.80	50
2150	4" diam.					50	.320		31.50	15.75		47.25	58.50
2160	5" diam.					45	.356		60	17.50		77.50	92.50
2170	6" diam.					40	.400		82.50	19.70		102.20	121
2180	8" diam.				▼	30	.533	▼	157	26.50		183.50	212
2400	45° Elbow, slip fit												
2410	2-1/8" diam.				Q-9	70	.229	Eq.	9.50	11.25		20.75	27.50
2420	2-1/2" diam.					65	.246		14	12.10		26.10	34
2430	3" diam.					60	.267		16.90	13.15		30.05	38.50
2440	3-1/2" diam.					55	.291		21.50	14.30		35.80	45.50
2450	4" diam.					50	.320		27.50	15.75		43.25	54.50
2460	5" diam.					45	.356		46.50	17.50		64	77.50
2470	6" diam.					40	.400		63	19.70		82.70	99
2480	8" diam.				▼	35	.457	▼	123	22.50		145.50	171
2800	90° TY, slip fit thru 6" diam.												
2810	2-1/8" diam.				Q-9	42	.381	Eq.	17.75	18.75		36.50	48
2820	2-1/2" diam.					39	.410		26.50	20		46.50	60
2830	3" diam.					36	.444		37	22		59	74
2840	3-1/2" diam.					33	.485		39	24		63	79
2850	4" diam.					30	.533		41.50	26.50		68	86
2860	5" diam.					27	.593		70.50	29		99.50	122
2870	6" diam.				▼	24	.667	▼	101	33		134	161
2880	8" diam., butt end								155			155	170
2890	10" diam., butt end								475			475	525

44 11 Particulate Control Equipment

44 11 16 – Fugitive Dust Barrier Systems

44 11 16.10 Dust Collection Systems		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
2900	12" diam., butt end				Ea.	475			475	525
2910	14" diam., butt end					855			855	940
2920	6" x 4" diam., butt end					106			106	116
2930	8" x 4" diam., butt end					200			200	220
2940	10" x 4" diam., butt end					263			263	289
2950	12" x 4" diam., butt end					300			300	330
3100	90° Elbow, butt end segmented									
3110	8" diam., butt end, segmented				Ea.	157			157	172
3120	10" diam., butt end, segmented					390			390	430
3130	12" diam., butt end, segmented					495			495	545
3140	14" diam., butt end, segmented					620			620	680
3200	45° Elbow, butt end segmented									
3210	8" diam., butt end, segmented				Ea.	123			123	136
3220	10" diam., butt end, segmented					282			282	310
3230	12" diam., butt end, segmented					288			288	315
3240	14" diam., butt end, segmented					585			585	645
3400	All butt end fittings require one coupling per joint.									
3410	Labor for fitting included with couplings.									
3460	Compression coupling, galvanized, neoprene gasket									
3470	2-1/8" diam.	Q-9	44	.364	Ea.	10.85	17.90		28.75	39.50
3480	2-1/2" diam.		44	.364		10.85	17.90		28.75	39.50
3490	3" diam.		38	.421		15.60	20.50		36.10	48.50
3500	3-1/2" diam.		35	.457		17.45	22.50		39.95	53.50
3510	4" diam.		33	.485		18.95	24		42.95	57.50
3520	5" diam.		29	.552		21.50	27		48.50	65.50
3530	6" diam.		26	.615		25.50	30.50		56	74.50
3540	8" diam.		22	.727		46	36		82	105
3550	10" diam.		20	.800		67.50	39.50		107	135
3560	12" diam.		18	.889		84	44		128	160
3570	14" diam.		16	1		119	49		168	206
3800	Air gate valves, galvanized									
3810	2-1/8" diam.	Q-9	30	.533	Ea.	111	26.50		137.50	162
3820	2-1/2" diam.		28	.571		119	28		147	174
3830	3" diam.		26	.615		127	30.50		157.50	187
3840	4" diam.		23	.696		147	34.50		181.50	215
3850	6" diam.		18	.889		205	44		249	292

Division Notes

[illegible]

Estimating Tips

This division contains information about water and wastewater equipment and systems, which was formerly located in Division 44.

The main areas of focus are total wastewater treatment plants and components of wastewater treatment plants. In addition, there are assemblies such as sewage treatment lagoons that can be found in some publications under G30 Site Mechanical Utilities.

Also included in this section are oil/water separators for wastewater treatment.

Reference Numbers

Reference numbers are shown in shaded boxes at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear in this publication.

46 07 Packaged Water and Wastewater Treatment Equipment

46 07 53 - Packaged Wastewater Treatment Equipment

46 07 53.10 Biological Packaged Water Treatment Plants		Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	BIOLOGICAL PACKAGED WATER TREATMENT PLANTS									
0011	Not including fencing or external piping									
0020	Steel packaged, blawn air aeration plants									
0100	1,000 GPD				Gal.				55	60.50
0200	5,000 GPD								22	24
0300	15,000 GPD								22	24
0400	30,000 GPD								15.40	16.95
0500	50,000 GPD								11	12.10
0600	100,000 GPD								9.90	10.90
0700	200,000 GPD								8.80	9.70
0800	500,000 GPD								7.70	8.45
1000	Concrete, extended aeration, primary and secondary treatment									
1010	10,000 GPD				Gal.				22	24
1100	30,000 GPD								15.40	16.95
1200	50,000 GPD								11	12.10
1400	100,000 GPD								9.90	10.90
1500	500,000 GPD								7.70	8.45
1700	Municipal wastewater treatment facility									
1720	1.0 MGD				Gal.				11	12.10
1740	1.5 MGD								10.60	11.65
1760	2.0 MGD								10	11
1780	3.0 MGD								7.80	8.60
1800	5.0 MGD								5.80	6.70
2000	Holding tank system, not incl. excavation or backfill									
2010	Recirculating chemical water closet	2 Plum	4	4	Ea.	520	230		750	920
2100	For valtage converter, add	"	16	1		295	57.50		352.50	410
2200	For high level alarm, add	1 Plum	7.80	1.026		114	59		173	215

46 07 53.20 Wastewater Treatment System

0010	WASTEWATER TREATMENT SYSTEM									
0020	Fiberglass, 1,000 gallon	B-21	1.29	21.705	Ea.	4,075	915	109	5,099	6,025
0100	1,500 gallon	"	1.03	27.184	"	8,150	1,150	136	9,436	10,900

Estimating Tips

- When estimating costs for the installation of electrical power generation equipment, factors to review include access to the job site, access and setting at the installation site, required connections, uncrating pads, anchors, leveling, final assembly of the components, and temporary protection from physical damage, including from exposure to the environment.
- Be aware of the cost of equipment supports, concrete pads, and vibration isolators, and cross-reference to other trades' specifications. Also, review site and structural drawings for items that must be included in the estimates.
- It is important to include items that are not documented in the plans and specifications but must be priced. These items include, but are not limited to, testing, dust protection, roof penetration, core drilling concrete floors and walls, patching, cleanup, and final adjustments. Add a contingency or allowance for utility company fees for power hookups, if needed.
- The project size and scope of electrical power generation equipment will have a significant impact on cost. The intent of RSMeans cost data is to provide a benchmark cost so that owners, engineers, and electrical contractors will have a comfortable number with which to start a project. Additionally, there are many websites available to use for research and to obtain a vendor's quote to finalize costs.

Reference Numbers

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Note: Not all subdivisions listed here necessarily appear in this publication.

48 15 Wind Energy Electrical Power Generation Equipment

48 15 13 – Wind Turbines

48 15 13.50 Wind Turbines and Components				Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs		Total	Total Incl O&P
									Labor	Equipment		
0010	WIND TURBINES & COMPONENTS											
0500	Complete system, grid connected											
1000	20 kW, 31' dia, incl. labor & material, min			G			System					49,900
1010	Maximum			G								92,000
1500	10 kW, 23' dia, incl. labor & material			G								74,000
2000	2.4 kW, 12' dia, incl. labor & material			G			▼					18,000
2900	Component system											
3000	Turbine, 400 watt, 3' dia			G	1 Elec	3.41	2.346	Ea.	755	125	880	1,025
3100	600 watt, 3' dia			G		2.56	3.125		955	167	1,122	1,300
3200	1000 watt, 9' dia			G		2.05	3.902	▼	3,825	208	4,033	4,525
3400	Mounting hardware											
3500	30' guyed tower kit			G	2 Clab	5.12	3.125	Ea.	455	115	570	675
3505	3' galvanized helical earth screw			G	1 Clab	8	1		53	36.50	89.50	115
3510	Attic mount kit			G	1 Rafc	2.56	3.125		133	122	255	355
3520	Roof mount kit			G	1 Clab	3.41	2.346	▼	118	86	204	262
8900	Equipment											
9100	DC to AC inverter far, 48 V, 4,000 watt			G	1 Elec	2	4	Ea.	2,750	213	2,963	3,350

Reference Section

All the reference information is in one section, making it easy to find what you need to know . . . and easy to use the book on a daily basis. This section is visually identified by a vertical gray bar on the page edges.

In this Reference Section, we've included Equipment Rental Costs, a listing of rental and operating costs; Crew Listings, a full listing of all crews and equipment, and their costs; Historical Cost Indexes for cost comparisons over time; City Cost Indexes and Location Factors for adjusting costs to the region you are in; Reference Tables, where you will find explanations, estimating information and procedures, or technical data; Change Orders, information on pricing changes to contract documents; Square Foot Costs that allow you to make a rough estimate for the overall cost of a project; and an explanation of all the Abbreviations in the book.

Table of Contents

Construction Equipment Rental Costs

691

Crew Listings

703

Historical Cost Indexes

739

City Cost Indexes

740

Location Factors

783

Reference Tables

789

R01 General Requirements..... 789

R02 Existing Conditions..... 803

R03 Concrete..... 806

R04 Masonry..... 822

R05 Metals..... 824

R06 Wood, Plastics & Composites..... 831

R07 Thermal & Moisture Protection..... 831

R08 Openings..... 833

R09 Finishes..... 836

R13 Special Construction..... 839

R14 Conveying Equipment..... 841

Reference Tables (cont.)

R22 Plumbing..... 842

R23 Heating, Ventilating &
Air Conditioning..... 844

R26 Electrical..... 847

R31 Earthwork..... 850

R32 Exterior Improvements..... 854

R33 Utilities..... 855

R34 Transportation..... 855

Change Orders

856

Square Foot Costs

861

Abbreviations

871

Estimating Tips

- This section contains the average costs to rent and operate hundreds of pieces of construction equipment. This is useful information when estimating the time and material requirements of any particular operation in order to establish a unit or total cost. Equipment costs include not only rental, but also operating costs for equipment under normal use.

Rental Costs

- Equipment rental rates are obtained from industry sources throughout North America—contractors, suppliers, dealers, manufacturers, and distributors.
- Rental rates vary throughout the country, with larger cities generally having lower rates. Lease plans for new equipment are available for periods in excess of six months, with a percentage of payments applying toward purchase.
- Monthly rental rates vary from 2% to 5% of the purchase price of the equipment depending on the anticipated life of the equipment and its wearing parts.
- Weekly rental rates are about 1/3 the monthly rates, and daily rental rates are about 1/3 the weekly rate.
- Rental rates can also be treated as reimbursement costs for contractor-owned equipment. Owned equipment costs include depreciation, loan payments, interest, taxes, insurance, storage, and major repairs.

Operating Costs

- The operating costs include parts and labor for routine servicing, such as repair and replacement of pumps, filters and worn lines. Normal operating expendables, such as fuel, lubricants, tires and electricity (where applicable), are also included.
- Extraordinary operating expendables with highly variable wear patterns, such as diamond bits and blades, are excluded. These costs can be found as material costs in the Unit Price section.
- The hourly operating costs listed do not include the operator's wages.

Equipment Cost/Day

- Any power equipment required by a crew is shown in the Crew Listings with a daily cost.
- The daily cost of equipment needed by a crew is based on dividing the weekly rental rate by 5 (number of working days in the week), and then adding the hourly operating cost times 8 (the number of hours in a day). This "Equipment Cost/Day" is shown in the far right column of the Equipment Rental pages.
- If equipment is needed for only one or two days, it is best to develop your own cost by including components for daily rent and hourly operating cost. This is important when the listed Crew for a task does not contain the equipment needed, such as a crane for lifting mechanical heating/cooling equipment up onto a roof.

- If the quantity of work is less than the crew's Daily Output shown for a Unit Price line item that includes a bare unit equipment cost, it is recommended to estimate one day's rental cost and operating cost for equipment shown in the Crew Listing for that line item.

Mobilization/ Demobilization

- The cost to move construction equipment from an equipment yard or rental company to the jobsite and back again is not included in equipment rental costs listed in the Reference section, nor in the bare equipment cost of any Unit Price line item, nor in any equipment costs shown in the Crew listings.
- Mobilization (to the site) and demobilization (from the site) costs can be found in the Unit Price section.
- If a piece of equipment is already at the jobsite, it is not appropriate to utilize mobil./ demob. costs again in an estimate.

01 54 33 | Equipment Rental

			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
10	0010	CONCRETE EQUIPMENT RENTAL without operators	R015433 -10						10
	0200	Bucket, concrete lightweight, 1/2 C.Y.	Ea.	.80	23	69	207	20.20	
	0300	1 C.Y.		.85	27	81	243	23	
	0400	1-1/2 C.Y.		1.10	36.50	110	330	30.80	
	0500	2 C.Y.		1.20	43.50	130	390	35.60	
	0580	8 C.Y.		5.95	252	755	2,275	198.60	
	0600	Cart, concrete, self-propelled, operator walking, 10 C.F.		3.40	55	165	495	60.20	
	0700	Operator riding, 18 C.F.		5.65	93.50	280	840	101.20	
	0800	Conveyer for concrete, portable, gas, 16" wide, 26' long		13.50	122	365	1,100	181	
	0900	46' long		13.90	147	440	1,325	199.20	
	1000	56' long		14.05	155	465	1,400	205.40	
	1100	Core drill, electric, 2-1/2 H.P., 1" to 8" bit diameter		1.50	57	171	515	46.20	
	1150	11 H.P., 8" to 18" cores		5.90	115	345	1,025	116.20	
	1200	Finisher, concrete floor, gas, riding trowel, 96" wide		14.05	142	425	1,275	197.40	
	1300	Gas, walk-behind, 3 blade, 36" trowel		2.35	20	60	180	30.80	
	1400	4 blade, 48" trowel		4.70	26.50	80	240	53.60	
	1500	Float, hand-operated (Bull float) 48" wide		.08	13.35	40	120	8.65	
	1570	Curb builder, 14 H.P., gas, single screw		14.65	250	750	2,250	267.20	
	1590	Double screw		15.30	287	860	2,575	294.40	
	1600	Floor grinder, concrete and terrazzo, electric, 22" path		2.19	134	402	1,200	97.90	
	1700	Edger, concrete, electric, 7" path		1.02	51.50	155	465	39.15	
	1750	Vacuum pick-up system for floor grinders, wet/dry		1.47	81.50	245	735	60.75	
	1800	Mixer, powered, mortar and concrete, gas, 6 C.F., 18 H.P.		9.20	117	350	1,050	143.60	
	1900	10 C.F., 25 H.P.		11.60	140	420	1,250	176.80	
	2000	16 C.F.		11.95	162	485	1,450	192.60	
	2100	Concrete, stationary, tilt drum, 2 C.Y.		6.80	228	685	2,050	191.40	
	2120	Pump, concrete, truck mounted 4" line 80' boom		24.55	855	2,570	7,700	710.40	
	2140	5" line, 110' boom		31.75	1,125	3,400	10,200	934	
	2160	Mud jack, 50 C.F. per hr.		7.35	127	380	1,150	134.80	
	2180	225 C.F. per hr.		9.65	145	435	1,300	164.20	
	2190	Shotcrete pump rig, 12 C.Y./hr.		15.10	220	660	1,975	252.80	
	2200	35 C.Y./hr.		17.80	237	710	2,125	284.40	
	2600	Saw, concrete, manual, gas, 18 H.P.		7.25	43.50	130	390	84	
	2650	Self-propelled, gas, 30 H.P.		14.40	100	300	900	175.20	
	2675	V-groove crack chaser, manual, gas, 6 H.P.		2.55	17.35	52	156	30.80	
	2700	Vibrators, concrete, electric, 60 cycle, 2 H.P.		.43	8.65	26	78	8.65	
	2800	3 H.P.		.61	11.65	35	105	11.90	
	2900	Gas engine, 5 H.P.		2.20	16	48	144	27.20	
	3000	8 H.P.		3.00	15	45	135	33	
	3050	Vibrating screed, gas engine, 8 H.P.		2.78	68.50	205	615	63.25	
	3120	Concrete transit mixer, 6 x 4, 250 H.P., 8 C.Y., rear discharge		62.50	565	1,690	5,075	838	
	3200	Front discharge		73.60	690	2,065	6,200	1,002	
	3300	6 x 6, 285 H.P., 12 C.Y., rear discharge		72.65	650	1,950	5,850	971.20	
	3400	Front discharge		75.95	695	2,085	6,250	1,025	
20	0010	EARTHWORK EQUIPMENT RENTAL without operators	R015433 -10						20
	0040	Aggregate spreader, push type 8' to 12' wide	Ea.	3.25	25.50	76	228	41.20	
	0045	Tailgate type, 8' wide		3.10	32.50	98	294	44.40	
	0055	Earth auger, truck-mounted, for fence & sign posts, utility poles		19.75	445	1,335	4,000	425	
	0060	For borings and monitoring wells		47.30	680	2,040	6,125	786.40	
	0070	Portable, trailer mounted		3.15	32.50	98	294	44.80	
	0075	Truck-mounted, for caissons, water wells		100.90	2,900	8,720	26,200	2,551	
	0080	Horizontal boring machine, 12" to 36" diameter, 45 H.P.		24.60	193	580	1,750	312.80	
	0090	12" to 48" diameter, 65 H.P.		34.85	335	1,005	3,025	479.80	
	0095	Auger, for fence posts, gas engine, hand held		.55	6	18	54	8	
	0100	Excavator, diesel hydraulic, crawler mounted, 1/2 C.Y. cap.		25.00	415	1,240	3,725	448	
	0120	5/8 C.Y. capacity		33.05	550	1,650	4,950	594.40	
	0140	3/4 C.Y. capacity		36.00	625	1,870	5,600	662	
	0150	1 C.Y. capacity		50.60	685	2,050	6,150	814.80	

01 54 | Construction Aids

01 54 33 | Equipment Rental

			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
20	0200	1-1/2 C.Y. capacity	Ea.	60.80	910	2,725	8,175	1,031	20
	0300	2 C.Y. capacity		68.50	1,050	3,135	9,400	1,175	
	0320	2-1/2 C.Y. capacity		104.75	1,325	3,995	12,000	1,637	
	0325	3-1/2 C.Y. capacity		147.35	2,100	6,315	18,900	2,442	
	0330	4-1/2 C.Y. capacity		176.65	2,725	8,150	24,500	3,043	
	0335	6 C.Y. capacity		224.40	2,875	8,640	25,900	3,523	
	0340	7 C.Y. capacity		226.60	2,975	8,915	26,700	3,596	
	0342	Excavator attachments, bucket thumbs		3.20	245	735	2,200	172.60	
	0345	Grapples		2.75	193	580	1,750	138	
	0347	Hydraulic hammer for boom mounting, 5000 ft lb.		14.30	425	1,280	3,850	370.40	
	0349	11,000 ft lb.		23.20	750	2,250	6,750	635.60	
	0350	Gradall type, truck mounted, 3 ton @ 15' radius, 5/8 C.Y.		43.45	890	2,670	8,000	881.60	
	0370	1 C.Y. capacity		47.65	1,050	3,120	9,350	1,005	
	0400	Backhoe-loader, 40 to 45 H.P., 5/8 C.Y. capacity		14.95	233	700	2,100	259.60	
	0450	45 H.P. to 60 H.P., 3/4 C.Y. capacity		23.90	290	870	2,600	365.20	
	0460	80 H.P., 1-1/4 C.Y. capacity		26.20	315	940	2,825	397.60	
	0470	112 H.P., 1-1/2 C.Y. capacity		41.65	645	1,935	5,800	720.20	
	0482	Backhoe-loader attachment, compactor, 20,000 lb.		5.75	142	425	1,275	131	
	0485	Hydraulic hammer, 750 ft lb.		3.25	96.50	290	870	84	
	0486	Hydraulic hammer, 1200 ft lb.		6.30	217	650	1,950	180.40	
	0500	Brush chipper, gas engine, 6" cutter head, 35 H.P.		11.95	107	320	960	159.60	
	0550	Diesel engine, 12" cutter head, 130 H.P.		28.20	285	855	2,575	396.60	
	0600	15" cutter head, 165 H.P.		33.90	330	985	2,950	468.20	
	0750	Bucket, clamshell, general purpose, 3/8 C.Y.		1.25	38.50	115	345	33	
	0800	1/2 C.Y.		1.35	45	135	405	37.80	
	0850	3/4 C.Y.		1.50	53.50	160	480	44	
	0900	1 C.Y.		1.55	58.50	175	525	47.40	
	0950	1-1/2 C.Y.		2.55	80	240	720	68.40	
	1000	2 C.Y.		2.65	88.50	265	795	74.20	
	1010	Bucket, dragline, medium duty, 1/2 C.Y.		.75	23.50	70	210	20	
	1020	3/4 C.Y.		.75	24.50	74	222	20.80	
	1030	1 C.Y.		.80	26	78	234	22	
	1040	1-1/2 C.Y.		1.20	40	120	360	33.60	
	1050	2 C.Y.		1.25	45	135	405	37	
	1070	3 C.Y.		1.95	61.50	185	555	52.60	
	1200	Compactor, manually guided 2-drum vibratory smooth roller, 7.5 H.P.		7.35	207	620	1,850	182.80	
	1250	Rammer/tamper, gas, 8"		2.70	46.50	140	420	49.60	
	1260	15"		3.00	53.50	160	480	56	
	1300	Vibratory plate, gas, 18" plate, 3000 lb. blow		2.65	24.50	73	219	35.80	
	1350	21" plate, 5000 lb. blow		3.30	32.50	98	294	46	
	1370	Curb builder/extruder, 14 H.P., gas, single screw		14.65	250	750	2,250	267.20	
	1390	Double screw		15.30	287	860	2,575	294.40	
	1500	Disc harrow attachment, for tractor		.43	72.50	217	650	46.85	
	1810	Feller buncher, shearing & accumulating trees, 100 H.P.		42.50	650	1,945	5,825	729	
	1860	Grader, self-propelled, 25,000 lb.		39.55	595	1,780	5,350	672.40	
	1910	30,000 lb.		43.25	600	1,805	5,425	707	
	1920	40,000 lb.		64.65	1,000	3,015	9,050	1,120	
	1930	55,000 lb.		84.65	1,600	4,800	14,400	1,637	
	1950	Hammer, pavement breaker, self-propelled, diesel, 1000 to 1250 lb.		30.25	355	1,060	3,175	454	
	2000	1300 to 1500 lb.		45.38	705	2,120	6,350	787.05	
	2050	Pile driving hammer, steam or air, 4150 ft lb. @ 225 bpm		10.35	475	1,425	4,275	367.80	
	2100	8750 ft lb. @ 145 bpm		12.35	660	1,980	5,950	494.80	
	2150	15,000 ft lb. @ 60 bpm		13.95	795	2,380	7,150	587.60	
	2200	24,450 ft lb. @ 111 bpm		14.95	880	2,640	7,925	647.60	
	2250	Leads, 60' high for pile driving hammers up to 20,000 ft lb.		3.30	80.50	242	725	74.80	
	2300	90' high for hammers over 20,000 ft lb.		4.95	141	424	1,275	124.40	
	2350	Diesel type hammer, 22,400 ft lb.		26.93	535	1,610	4,825	537.45	
	2400	41,300 ft lb.		36.30	585	1,760	5,275	642.40	

01 54 | Construction Aids

01 54 33 | Equipment Rental

			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
20	2450	141,000 ft lb.	Ea.	55.55	1 050	3,160	9,475	1 076	20
	2500	Vib. elec. hammer/extractor, 200 kW diesel generator, 34 H.P.		56.25	635	1,910	5,725	832	
	2550	80 H.P.		103.45	930	2,785	8,350	1,385	
	2600	150 H.P.		196.65	1,775	5,335	16,000	2,640	
	2800	Log chipper, up to 22" diameter, 600 H.P.		64.95	630	1,895	5,675	898.60	
	2850	Logger, for skidding & stacking logs, 150 H.P.		53.45	820	2,460	7,375	919.60	
	2860	Mulcher, diesel powered, trailer mounted		24.70	213	640	1,925	325.60	
	2900	Rake, spring tooth, with tractor		18.31	335	1,007	3,025	347.90	
	3000	Roller, vibratory, tandem, smooth drum, 20 H.P.		8.75	148	445	1,325	159	
	3050	35 H.P.		11.25	253	760	2,275	242	
	3100	Towed type vibratory compactor, smooth drum, 50 H.P.		26.25	335	1,010	3,025	412	
	3150	Sheepsfoot, 50 H.P.		27.60	370	1,115	3,350	443.80	
	3170	Landfill compactor, 220 H.P.		91.85	1,500	4,485	13,500	1,632	
	3200	Pneumatic tire roller, 80 H.P.		17.00	355	1,065	3,200	349	
	3250	120 H.P.		25.45	605	1,815	5,450	566.60	
	3300	Sheepsfoot vibratory roller, 240 H.P.		69.65	1,100	3,305	9,925	1,218	
	3320	340 H.P.		101.85	1,600	4,830	14,500	1,781	
	3350	Smooth drum vibratory roller, 75 H.P.		25.15	595	1,790	5,375	559.20	
	3400	125 H.P.		32.85	715	2,150	6,450	692.80	
	3410	Rotary mower, brush, 60", with tractor		22.65	305	915	2,750	364.20	
	3420	Rototiller, walk-behind, gas, 5 H.P.		2.23	66	198	595	57.45	
	3422	8 H.P.		3.30	91.50	275	825	81.40	
	3440	Scrapers, towed type, 7 C.Y. capacity		5.70	110	330	990	111.60	
	3450	10 C.Y. capacity		6.45	150	450	1,350	141.60	
	3500	15 C.Y. capacity		6.85	173	520	1,550	158.80	
	3525	Self-propelled, single engine, 14 C.Y. capacity		113.60	1,525	4,600	13,800	1,829	
	3550	Dual engine, 21 C.Y. capacity		174.50	2,000	6,015	18,000	2,599	
	3600	31 C.Y. capacity		232.10	2,850	8,545	25,600	3,566	
	3640	44 C.Y. capacity		287.55	3,650	10,960	32,900	4,492	
	3650	Elevating type, single engine, 11 C.Y. capacity		71.20	1,025	3,050	9,150	1,180	
	3700	22 C.Y. capacity		138.15	2,225	6,690	20,100	2,443	
	3710	Screening plant 110 H.P. w/5' x 10' screen		31.63	435	1,300	3,900	513.05	
	3720	5' x 16' screen		34.85	540	1,615	4,850	601.80	
	3850	Shovel, crawler-mounted, front-loading, 7 C.Y. capacity		246.75	2,900	8,700	26,100	3,714	
	3855	12 C.Y. capacity		354.50	3,950	11,840	35,500	5,204	
	3860	Shovel/backhoe bucket, 1/2 C.Y.		2.45	66.50	200	600	59.60	
	3870	3/4 C.Y.		2.50	73.50	220	660	64	
	3880	1 C.Y.		2.60	83.50	250	750	70.80	
	3890	1-1/2 C.Y.		2.75	96.50	290	870	80	
	3910	3 C.Y.		3.10	130	390	1,175	102.80	
	3950	Stump chipper, 18" deep, 30 H.P.		7.06	176	528	1,575	162.10	
	4110	Dozer, crawler, torque converter, diesel 80 H.P.		29.75	405	1,215	3,650	481	
	4150	105 H.P.		36.10	505	1,515	4,550	591.80	
	4200	140 H.P.		52.10	780	2,335	7,000	883.80	
	4260	200 H.P.		77.35	1,175	3,530	10,600	1,325	
	4310	300 H.P.		100.55	1,700	5,065	15,200	1,817	
	4360	410 H.P.		135.65	2,200	6,620	19,900	2,409	
	4370	500 H.P.		174.30	2,875	8,610	25,800	3,116	
	4380	700 H.P.		261.35	4,000	11,970	35,900	4,485	
	4400	Loader, crawler, torque conv., diesel, 1-1/2 C.Y., 80 H.P.		31.35	455	1,360	4,075	522.80	
	4450	1-1/2 to 1-3/4 C.Y., 95 H.P.		34.15	585	1,760	5,275	625.20	
	4510	1-3/4 to 2-1/4 C.Y., 130 H.P.		54.60	870	2,615	7,850	959.80	
	4530	2-1/2 to 3-1/4 C.Y., 190 H.P.		67.00	1,100	3,275	9,825	1,191	
	4560	3-1/2 to 5 C.Y., 275 H.P.		86.10	1,400	4,215	12,600	1,532	
	4610	Front end loader, 4WD, articulated frame, diesel, 1 to 1-1/4 C.Y., 70 H.P.		19.90	227	680	2,050	295.20	
	4620	1-1/2 to 1-3/4 C.Y., 95 H.P.		25.30	285	855	2,575	373.40	
	4650	1-3/4 to 2 C.Y., 130 H.P.		29.45	365	1,100	3,300	455.60	
	4710	2 1/2 to 3-1/2 C.Y. 145 H.P.		33.35	425	1,280	3,850	522.80	

01 54 | Construction Aids

01 54 33 Equipment Rental			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY		
20	4730	3 to 4-1/2 C.Y., 185 H.P.	Ea.	42.85	550	1,655	4,975	673.80	20	
	4760	5-1/4 to 5-3/4 C.Y., 270 H.P.		67.80	845	2,535	7,600	1,049		
	4810	7 to 9 C.Y., 475 H.P.		116.25	1,775	5,295	15,900	1,989		
	4870	9 - 11 C.Y., 620 H.P.		155.75	2,425	7,285	21,900	2,703		
	4880	Skid steer loader, wheeled, 10 C.F., 30 H.P. gas		10.90	145	435	1,300	174.20		
	4890	1 C.Y., 78 H.P., diesel		20.35	243	730	2,200	308.80		
	4892	Skid-steer attachment, auger		.50	83.50	251	755	54.20		
	4893	Backhoe		.66	111	332	995	71.70		
	4894	Broom		.74	124	372	1,125	80.30		
	4895	Forks		.23	38.50	115	345	24.85		
	4896	Grapple		.56	92.50	278	835	60.10		
	4897	Concrete hammer		1.06	177	531	1,600	114.70		
	4898	Tree spade		1.03	172	515	1,550	111.25		
	4899	Trencher		.67	112	335	1,000	72.35		
	4900	Trencher, chain, boom type, gas, operator walking, 12 H.P.		5.40	46.50	140	420	71.20		
	4910	Operator riding, 40 H.P.		20.55	292	875	2,625	339.40		
	5000	Wheel type, diesel, 4' deep, 12" wide		87.50	845	2,530	7,600	1,206		
	5100	6' deep, 20" wide		93.25	1,925	5,760	17,300	1,898		
	5150	Chain type, diesel, 5' deep, 8" wide		38.85	560	1,685	5,050	647.80		
	5200	Diesel, 8' deep, 16" wide		156.45	3,550	10,620	31,900	3,376		
	5202	Rock trencher, wheel type, 6" wide x 18" deep		21.50	330	985	2,950	369		
	5206	Chain type, 18" wide x 7' deep		112.60	2,825	8,445	25,300	2,590		
	5210	Tree spade, self-propelled		14.00	267	800	2,400	272		
	5250	Truck, dump, 2-axle, 12 ton, 8 C.Y. payload, 220 H.P.		35.15	227	680	2,050	417.20		
	5300	Three axle dump, 16 ton, 12 C.Y. payload, 400 H.P.		62.40	320	965	2,900	692.20		
	5310	Four axle dump, 25 ton, 18 C.Y. payload, 450 H.P.		73.20	470	1,410	4,225	867.60		
	5350	Dump trailer only, rear dump, 16-1/2 C.Y.		5.40	138	415	1,250	126.20		
	5400	20 C.Y.		5.85	157	470	1,400	140.80		
	5450	Flatbed, single axle, 1-1/2 ton rating		28.65	68.50	205	615	270.20		
	5500	3 ton rating		34.25	98.50	295	885	333		
	5550	Off highway rear dump, 25 ton capacity		74.55	1,200	3,590	10,800	1,314		
	5600	35 ton capacity		83.10	1,350	4,025	12,100	1,470		
	5610	50 ton capacity		103.40	1,600	4,800	14,400	1,787		
	5620	65 ton capacity		106.30	1,575	4,735	14,200	1,797		
	5630	100 ton capacity		154.35	2,775	8,315	24,900	2,898		
	6000	Vibratory plow, 25 H.P., walking		9.25	60	180	540	110		
40	0010	GENERAL EQUIPMENT RENTAL without operators							40	
	0150	Aerial lift, scissor type, to 15' high, 1000 lb. cap., electric	R015433 -10	Ea.	3.10	51.50	155	465		55.80
	0160	To 25' high, 2000 lb. capacity			3.55	66.50	200	600		68.40
	0170	Telescoping boom to 40' high, 500 lb. capacity, diesel			17.00	315	945	2,825		325
	0180	To 45' high, 500 lb. capacity			18.85	355	1,070	3,200		364.80
	0190	To 60' high, 600 lb. capacity			21.25	475	1,430	4,300		456
	0195	Air compressor, portable, 6.5 CFM, electric			.56	12.65	38	114		12.10
	0196	Gasoline			.79	19	57	171		17.70
	0200	Towed type, gas engine, 60 CFM			13.55	48.50	145	435		137.40
	0300	160 CFM			15.80	51.50	155	465		157.40
	0400	Diesel engine, rotary screw, 250 CFM			17.05	110	330	990		202.40
	0500	365 CFM			23.10	133	400	1,200		264.80
	0550	450 CFM			29.35	167	500	1,500		334.80
	0600	600 CFM			51.70	232	695	2,075		552.60
	0700	750 CFM			51.90	240	720	2,150		559.20
	0800	For silenced models, small sizes, add to rent			3%	5%	5%	5%		
	0900	Large sizes, add to rent			5%	7%	7%	7%		
	0930	Air tools, breaker, pavement, 60 lb.		Ea.	.50	9.65	29	87		9.80
	0940	80 lb.			.50	10.35	31	93		10.20
	0950	Drills, hand (jackhammer) 65 lb.			.60	17.35	52	156		15.20
0960	Track or wagon, swing boom, 4" drifter			63.45	885	2,660	7,975	1,040		
0970	5" drifter			75.50	1,075	3,255	9,775	1,255		

01 54 | Construction Aids

01 54 33 Equipment Rental			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
40	0975	Track mounted quarry drill, 6" diameter drill	Ea.	129.75	1,600	4,830	14,500	2,004	40
	0980	Dust control per drill		.97	24	72	216	22.15	
	0990	Hammer, chipping, 12 lb.		.55	26	78	234	20	
	1000	Hose, air with couplings, 50' long, 3/4" diameter		.03	5	15	45	3.25	
	1100	1" diameter		.04	6.35	19	57	4.10	
	1200	1-1/2" diameter		.05	9	27	81	5.80	
	1300	2" diameter		.07	12	36	108	7.75	
	1400	2-1/2" diameter		.11	19	57	171	12.30	
	1410	3" diameter		.14	23	69	207	14.90	
	1450	Drill, steel, 7/8" x 2'		.05	8.65	26	78	5.60	
	1460	7/8" x 6'		.05	9	27	81	5.80	
	1520	Moil points		.02	3.33	10	30	2.15	
	1525	Pneumatic nailer w/accessories		.47	31	93	279	22.35	
	1530	Sheeting driver for 60 lb. breaker		.03	5.65	17	51	3.65	
	1540	For 90 lb. breaker		.11	7.35	22	66	5.30	
	1550	Spade, 25 lb.		.45	7	21	63	7.80	
	1560	Tamper, single, 35 lb.		.55	36.50	109	325	26.20	
	1570	Triple, 140 lb.		.82	54.50	164	490	39.35	
	1580	Wrenches, impact, air powered, up to 3/4" bolt		.40	12.65	38	114	10.80	
	1590	Up to 1-1/4" bolt		.50	23.50	70	210	18	
	1600	Barricades, barrels, reflectorized, 1 to 99 barrels		.03	4.60	13.80	41.50	3	
	1610	100 to 200 barrels		.02	3.53	10.60	32	2.30	
	1620	Barrels with flashers, 1 to 99 barrels		.03	5.25	15.80	47.50	3.40	
	1630	100 to 200 barrels		.03	4.20	12.60	38	2.75	
	1640	Barrels with steady burn type C lights		.04	7	21	63	4.50	
	1650	Illuminated board, trailer mounted, with generator		3.55	130	390	1,175	106.40	
	1670	Portable barricade, stock, with flashers, 1 to 6 units		.03	5.25	15.80	47.50	3.40	
	1680	25 to 50 units		.03	4.90	14.70	44	3.20	
	1685	Butt fusion machine, wheeled, 1.5 HP electric, 2" - 8" diameter pipe		2.62	167	500	1,500	120.95	
	1690	Tracked, 20 HP diesel, 4"-12" diameter pipe		11.10	490	1,465	4,400	381.80	
	1695	83 HP diesel, 8" - 24" diameter pipe		30.30	975	2,930	8,800	828.40	
	1700	Carts, brick, hand powered, 1000 lb. capacity		.44	72.50	218	655	47.10	
	1800	Gas engine, 1500 lb., 7-1/2' lift		4.10	115	345	1,025	101.80	
	1822	Dehumidifier, medium, 6 lb./hr., 150 CFM		.99	62	186	560	45.10	
	1824	Large, 18 lb./hr., 600 CFM		2.01	126	378	1,125	91.70	
	1830	Distributor, asphalt, trailer mounted, 2000 gal., 38 H.P. diesel		10.15	330	985	2,950	278.20	
	1840	3000 gal., 38 H.P. diesel		11.65	360	1,075	3,225	308.20	
	1850	Drill, rotary hammer, electric		1.00	26.50	80	240	24	
	1860	Carbide bit, 1-1/2" diameter, add to electric rotary hammer		.02	3.61	10.84	32.50	2.35	
	1865	Rotary, crawler, 250 H.P.		150.45	2,100	6,285	18,900	2,461	
1870	Emulsion sprayer, 65 gal., 5 H.P. gas engine		2.90	98	294	880	82		
1880	200 gal., 5 H.P. engine		7.85	163	490	1,475	160.80		
1900	Floor auto-scrubbing machine, walk-behind, 28" path		4.52	293	880	2,650	212.15		
1930	Floodlight, mercury vapor, or quartz, on tripod, 1000 watt		.41	19.35	58	174	14.90		
1940	2000 watt		.78	39	117	350	29.65		
1950	Floodlights, trailer mounted with generator, 1 - 300 watt light		3.65	71.50	215	645	72.20		
1960	2 - 1000 watt lights		4.90	98.50	295	885	98.20		
2000	4 - 300 watt lights		4.60	93.50	280	840	92.80		
2005	Foam spray rig, incl. box trailer, compressor, generator, proportioner		36.53	490	1,465	4,400	585.25		
2020	Forklift, straight mast, 12' lift, 5000 lb., 2 wheel drive, gas		25.35	203	610	1,825	324.80		
2040	21' lift, 5000 lb., 4 wheel drive, diesel		21.15	242	725	2,175	314.20		
2050	For rough terrain, 42' lift, 35' reach, 9000 lb., 110 H.P.		29.95	485	1,460	4,375	531.60		
2060	For plant, 4 ton capacity, 80 H.P., 2 wheel drive, gas		15.50	93.50	280	840	180		
2080	10 ton capacity, 120 H.P., 2 wheel drive, diesel		24.30	162	485	1,450	291.40		
2100	Generator, electric, gas engine, 1.5 kW to 3 kW		3.95	11.35	34	102	38.40		
2200	5 kW		5.10	15.35	46	138	50		
2300	10 kW		9.65	36.50	110	330	99.20		
2400	25 kW		11.00	86.50	260	780	140		

01 54 | Construction Aids

01 54 33 | Equipment Rental

			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
40	2500	Diesel engine, 20 kW	Ea.	12.55	68.50	205	615	141.40	40
	2600	50 kW		24.35	103	310	930	256.80	
	2700	100 kW		45.15	130	390	1,175	439.20	
	2800	250 kW		88.85	237	710	2,125	852.80	
	2850	Hammer, hydraulic, for mounting on boom, to 500 ft lb.		2.55	75	225	675	65.40	
	2860	1000 ft lb.		4.35	127	380	1,150	110.80	
	2900	Heaters, space, oil or electric, 50 MBH		1.93	7.65	23	69	20.05	
	3000	100 MBH		3.61	10.65	32	96	35.30	
	3100	300 MBH		10.58	38.50	115	345	107.65	
	3150	500 MBH		17.40	45	135	405	166.20	
	3200	Hose, water, suction with coupling, 20' long, 2" diameter		.02	3	9	27	1.95	
	3210	3" diameter		.03	4.33	13	39	2.85	
	3220	4" diameter		.03	5	15	45	3.25	
	3230	6" diameter		.11	17.65	53	159	11.50	
	3240	8" diameter		.20	33.50	100	300	21.60	
	3250	Discharge hose with coupling, 50' long, 2" diameter		.01	1.33	4	12	.90	
	3260	3" diameter		.01	2.33	7	21	1.50	
	3270	4" diameter		.02	3.67	11	33	2.35	
	3280	6" diameter		.06	9.35	28	84	6.10	
	3290	8" diameter		.20	33.50	100	300	21.60	
	3295	Insulation blower		.77	6	18	54	9.75	
	3300	Ladders, extension type, 16' to 36' long		.14	22.50	68	204	14.70	
	3400	40' to 60' long		.19	31	93	279	20.10	
	3405	Lance for cutting concrete		2.52	89	267	800	73.55	
	3407	Lawn mower, rotary, 22", 5 H.P.		2.10	59	177	530	52.20	
	3408	48" self propelled		2.92	75	225	675	68.35	
	3410	Level, electronic, automatic, with tripod and leveling rod		1.49	99	297	890	71.30	
	3430	Laser type, for pipe and sewer line and grade		.73	48.50	145	435	34.85	
	3440	Rotating beam for interior control		.97	64	192	575	46.15	
	3460	Builder's optical transit, with tripod and rod		.10	16.65	50	150	10.80	
	3500	Light towers, towable, with diesel generator, 2000 watt		4.60	93.50	280	840	92.80	
	3600	4000 watt		4.90	98.50	295	885	98.20	
	3700	Mixer, powered, plaster and mortar, 6 C.F., 7 H.P.		2.90	19	57	171	34.60	
	3800	10 C.F., 9 H.P.		3.05	30.50	91	273	42.60	
	3850	Nailer, pneumatic		.47	31	93	279	22.35	
	3900	Paint sprayers complete, 8 CFM		.94	62.50	187	560	44.90	
	4000	17 CFM		1.57	104	313	940	75.15	
	4020	Pavers, bituminous, rubber tires, 8' wide, 50 H.P., diesel		31.85	500	1,500	4,500	554.80	
	4030	10' wide, 150 H.P.		107.95	1,825	5,460	16,400	1,956	
	4050	Crawler, 8' wide, 100 H.P., diesel		90.45	1,825	5,500	16,500	1,824	
	4060	10' wide, 150 H.P.		115.10	2,250	6,715	20,100	2,264	
	4070	Concrete paver, 12' to 24' wide, 250 H.P.		102.05	1,525	4,600	13,800	1,736	
	4080	Placer-spreader-trimmer, 24' wide, 300 H.P.		147.05	2,475	7,405	22,200	2,657	
	4100	Pump, centrifugal gas pump, 1-1/2" diam., 65 GPM		3.95	50	150	450	61.60	
	4200	2" diameter, 130 GPM		5.30	55	165	495	75.40	
	4300	3" diameter, 250 GPM		5.60	56.50	170	510	78.80	
	4400	6" diameter, 1500 GPM		29.35	177	530	1,600	340.80	
	4500	Submersible electric pump, 1-1/4" diameter, 55 GPM		.38	16.65	50	150	13.05	
	4600	1-1/2" diameter, 83 GPM		.42	19	57	171	14.75	
	4700	2" diameter, 120 GPM		1.43	23.50	71	213	25.65	
	4800	3" diameter, 300 GPM		2.55	41.50	125	375	45.40	
	4900	4" diameter, 560 GPM		10.65	160	480	1,450	181.20	
	5000	6" diameter, 1590 GPM		15.75	215	645	1,925	255	
	5100	Diaphragm pump, gas, single, 1-1/2" diameter		1.18	50.50	152	455	39.85	
	5200	2" diameter		4.25	63.50	190	570	72	
	5300	3" diameter		4.25	63.50	190	570	72	
	5400	Double, 4" diameter		6.35	108	325	975	115.80	
	5450	Pressure washer 5 GPM, 3000 psi		4.80	51.50	155	465	69.40	

01 54 33 | Equipment Rental

01 54 33 Equipment Rental			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
40	5460	7 GPM, 3000 psi	Ea.	6.25	60	180	540	86	40
	5500	Trash pump, self-priming, gas, 2" diameter		4.50	21.50	64	192	48.80	
	5600	Diesel, 4" diameter		9.30	90	270	810	128.40	
	5650	Diesel, 6" diameter		25.55	150	450	1,350	294.40	
	5655	Grout Pump		26.80	260	780	2,350	370.40	
	5700	Salamanders, L.P. gas fired, 100,000 Btu		3.81	13.65	41	123	38.70	
	5705	50,000 Btu		2.39	10.35	31	93	25.30	
	5720	Sandblaster, portable, open top, 3 C.F. capacity		.55	26.50	80	240	20.40	
	5730	6 C.F. capacity		.95	40	120	360	31.60	
	5740	Accessories for above		.13	21.50	64	192	13.85	
	5750	Sander, floor		.71	17	51	153	15.90	
	5760	Edger		.57	18.35	55	165	15.55	
	5800	Saw, chain, gas engine, 18" long		2.25	22	66	198	31.20	
	5900	Hydraulic powered, 36" long		.75	65	195	585	45	
	5950	60" long		.75	66.50	200	600	46	
	6000	Masonry, table mounted, 14" diameter, 5 H.P.		1.31	56.50	170	510	44.50	
	6050	Portable cut-off, 8 H.P.		2.40	33.50	100	300	39.20	
	6100	Circular, hand held, electric, 7-1/4" diameter		.22	4.67	14	42	4.55	
	6200	12" diameter		.22	8	24	72	6.55	
	6250	Wall saw, w/hydraulic power, 10 H.P.		10.45	60	180	540	119.60	
	6275	Shot blaster, walk-behind, 20" wide		4.80	293	880	2,650	214.40	
	6280	Sidewalk broom, walk-behind		2.32	70	210	630	60.55	
	6300	Steam cleaner, 100 gallons per hour		3.70	76.50	230	690	75.60	
	6310	200 gallons per hour		5.25	95	285	855	99	
	6340	Tar Kettle/Pot, 400 gallons		10.50	76.50	230	690	130	
	6350	Torch, cutting, acetylene-oxygen, 150' hose, excludes gases		.30	15	45	135	11.40	
	6360	Hourly operating cost includes tips and gas		19.00				152	
	6410	Toilet, portable chemical		.12	20.50	62	186	13.35	
	6420	Recycle flush type		.15	24.50	74	222	16	
	6430	Toilet, fresh water flush, garden hose,		.18	29.50	89	267	19.25	
	6440	Hoisted, non-flush, for high rise		.15	24.50	73	219	15.80	
	6465	Tractor, farm with attachment		21.90	277	830	2,500	341.20	
	6500	Trailers, platform, flush deck, 2 axle, 25 ton capacity		5.45	117	350	1,050	113.60	
	6600	40 ton capacity		7.00	160	480	1,450	152	
	6700	3 axle, 50 ton capacity		7.55	177	530	1,600	166.40	
	6800	75 ton capacity		9.35	232	695	2,075	213.80	
	6810	Trailer mounted cable reel for high voltage line work		5.35	255	764	2,300	195.60	
	6820	Trailer mounted cable tensioning rig		10.64	505	1,520	4,550	389.10	
	6830	Cable pulling rig		71.33	2,825	8,510	25,500	2,273	
	6900	Water tank trailer, engine driven discharge, 5000 gallons		6.95	143	430	1,300	141.60	
	6925	10,000 gallons		9.50	198	595	1,775	195	
	6950	Water truck, off highway, 6000 gallons		89.80	775	2,330	7,000	1,184	
	7010	Tram car for high voltage line work, powered, 2 conductor		6.27	138	415	1,250	133.15	
	7020	Transit (builder's level) with tripod		.10	16.65	50	150	10.80	
	7030	Trench box, 3000 lb., 6' x 8'		.56	93.50	280	840	60.50	
	7040	7200 lb., 6' x 20'		.78	130	389	1,175	84.05	
	7050	8000 lb., 8' x 16'		1.08	180	540	1,625	116.65	
	7060	9500 lb., 8' x 20'		1.21	201	603	1,800	130.30	
	7065	11,000 lb., 8' x 24'		1.27	211	633	1,900	136.75	
	7070	12,000 lb., 10' x 20'		1.36	227	680	2,050	146.90	
	7100	Truck, pickup, 3/4 ton, 2 wheel drive		15.25	58.50	175	525	157	
	7200	4 wheel drive		15.55	73.50	220	660	168.40	
	7250	Crew carrier, 9 passenger		21.60	86.50	260	780	224.80	
	7290	Flat bed truck, 20,000 lb. GWV		22.30	125	375	1,125	253.40	
	7300	Tractor, 4 x 2, 220 H.P.		31.05	197	590	1,775	366.40	
	7410	330 H.P.		46.05	272	815	2,450	531.40	
	7500	6 x 4, 380 H.P.		52.85	315	950	2,850	612.80	
	7600	450 H.P.		64.05	385	1,150	3,450	742.40	

01 54 | Construction Aids

01 54 33 Equipment Rental			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
40	7610	Tractor, with A frame, boom and winch, 225 H.P.	Ea.	33.95	272	815	2,450	434.60	40
	7620	Vacuum truck, hazardous material, 2500 gallons		12.00	292	875	2,625	271	
	7625	5,000 gallons		14.27	410	1,230	3,700	360.15	
	7650	Vacuum, HEPA, 16 gallon, wet/dry		.83	18	54	162	17.45	
	7655	55 gallon, wet/dry		.77	27	81	243	22.35	
	7660	Water tank, portable		.16	26.50	80	240	17.30	
	7690	Sewer/catch basin vacuum, 14 C.Y., 1500 gallons		18.61	615	1,850	5,550	518.90	
	7700	Welder, electric, 200 amp		3.64	16.35	49	147	38.90	
	7800	300 amp		5.41	20	60	180	55.30	
	7900	Gas engine, 200 amp		13.90	23.50	70	210	125.20	
	8000	300 amp		15.90	24.50	74	222	142	
	8100	Wheelbarrow, any size		.08	13	39	117	8.45	
	8200	Wrecking ball, 4000 lb.	▼	2.30	68.50	205	615	59.40	
50	0010	HIGHWAY EQUIPMENT RENTAL without operators							50
	0050	Asphalt batch plant, portable drum mixer, 100 ton/hr.	R015433 -10 Ea.	79.15	1,450	4,320	13,000	1,497	
	0060	200 ton/hr.		90.32	1,525	4,590	13,800	1,641	
	0070	300 ton/hr.		107.39	1,800	5,390	16,200	1,937	
	0100	Backhoe attachment, long stick, up to 185 H.P., 10.5' long		.35	23	69	207	16.60	
	0140	Up to 250 H.P., 12' long		.37	24.50	74	222	17.75	
	0180	Over 250 H.P., 15' long		.52	34.50	103	310	24.75	
	0200	Special dipper arm, up to 100 H.P., 32' long		1.06	70.50	211	635	50.70	
	0240	Over 100 H.P., 33' long		1.32	87.50	263	790	63.15	
	0280	Catch basin/sewer cleaning truck, 3 ton, 9 C.Y., 1000 gal.		46.25	390	1,170	3,500	604	
	0300	Concrete batch plant, portable, electric, 200 C.Y./hr.		22.08	510	1,525	4,575	481.65	
	0520	Grader/dozer attachment, ripper/scarifier, rear mounted, up to 135 H.P.		3.45	65	195	585	66.60	
	0540	Up to 180 H.P.		4.05	81.50	245	735	81.40	
	0580	Up to 250 H.P.		4.45	93.50	280	840	91.60	
	0700	Pvmt. removal bucket, for hyd. excavator, up to 90 H.P.		1.90	51.50	155	465	46.20	
	0740	Up to 200 H.P.		2.10	73.50	220	660	60.80	
	0780	Over 200 H.P.		2.25	85	255	765	69	
	0900	Aggregate spreader, self-propelled, 187 H.P.		53.75	685	2,055	6,175	841	
	1000	Chemical spreader, 3 C.Y.		3.40	43.50	130	390	53.20	
	1900	Hammermill, traveling, 250 H.P.		77.73	2,050	6,120	18,400	1,846	
	2000	Horizontal borer, 3" diameter, 13 H.P. gas driven		6.25	55	165	495	83	
	2150	Horizontal directional drill, 20,000 lb. thrust, 78 H.P. diesel		31.55	675	2,030	6,100	658.40	
	2160	30,000 lb. thrust, 115 H.P.		39.40	1,025	3,105	9,325	936.20	
	2170	50,000 lb. thrust, 170 H.P.		56.45	1,325	3,970	11,900	1,246	
	2190	Mud trailer for HDD, 1500 gallons, 175 H.P., gas		35.35	153	460	1,375	374.80	
	2200	Hydromulcher, diesel, 3000 gallon, for truck mounting		24.05	247	740	2,225	340.40	
	2300	Gas, 600 gallon		9.20	98.50	295	885	132.60	
	2400	Joint & crack cleaner, walk behind, 25 H.P.		4.35	50	150	450	64.80	
	2500	Filler, trailer mounted, 400 gallons, 20 H.P.		9.60	212	635	1,900	203.80	
	3000	Paint striper, self-propelled, 40 gallon, 22 H.P.		7.60	157	470	1,400	154.80	
	3100	120 gallon, 120 H.P.		24.80	400	1,195	3,575	437.40	
	3200	Post drivers, 6" I-Beam frame, for truck mounting		19.65	380	1,145	3,425	386.20	
	3400	Road sweeper, self-propelled, 8' wide, 90 H.P.		40.30	570	1,715	5,150	665.40	
	3450	Road sweeper, vacuum assisted, 4 C.Y., 220 gallons		77.55	625	1,870	5,600	994.40	
	4000	Road mixer, self-propelled, 130 H.P.		47.80	775	2,320	6,950	846.40	
	4100	310 H.P.		84.40	2,100	6,335	19,000	1,942	
	4220	Cold mix paver, incl. pug mill and bitumen tank, 165 H.P.		98.80	2,325	6,965	20,900	2,183	
	4240	Pavement brush, towed		3.20	93.50	280	840	81.60	
	4250	Paver, asphalt, wheel or crawler, 130 H.P., diesel		98.45	2,300	6,905	20,700	2,169	
	4300	Paver, road widener, gas 1' to 6', 67 H.P.		49.40	905	2,715	8,150	938.20	
	4400	Diesel, 2' to 14', 88 H.P.		63.70	1,050	3,170	9,500	1,144	
	4600	Slipform pavers, curb and gutter, 2 track, 75 H.P.		52.00	805	2,410	7,225	898	
	4700	4 track, 165 H.P.		41.65	730	2,185	6,550	770.20	
	4800	Median barrier, 215 H.P.	▼	54.00	890	2,670	8,000	966	

01 54 | Construction Aids

01 54 33 Equipment Rental			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
50	4901	Trailer, low bed, 75 ton capacity	Ea.	10.10	232	695	2,075	219.80	50
	5000	Road planer, walk behind, 10" cutting width, 10 H.P.		4.00	33.50	100	300	52	
	5100	Self-propelled, 12" cutting width, 64 H.P.		11.45	113	340	1,025	159.60	
	5120	Traffic line remover, metal ball blaster, truck mounted, 115 H.P.		48.75	750	2,245	6,725	839	
	5140	Grinder, truck mounted, 115 H.P.		55.45	810	2,435	7,300	930.60	
	5160	Walk-behind, 11 H.P.		4.55	53.50	160	480	68.40	
	5200	Pavement profiler, 4' to 6' wide, 450 H.P.		258.10	3,350	10,045	30,100	4,074	
	5300	8' to 10' wide, 750 H.P.		405.10	4,400	13,180	39,500	5,877	
	5400	Roadway plate, steel, 1" x 8' x 20'		.08	13	39	117	8.45	
	5600	Stabilizer, self-propelled, 150 H.P.		50.10	610	1,835	5,500	767.80	
	5700	310 H.P.		100.25	1,700	5,125	15,400	1,827	
	5800	Striper, truck mounted, 120 gallon paint, 460 H.P.		71.05	485	1,460	4,375	860.40	
	5900	Thermal paint heating kettle, 115 gallons		5.95	25.50	77	231	63	
	6000	Tar kettle, 330 gallon, trailer mounted		8.70	58.50	175	525	104.60	
	7000	Tunnel locomotive, diesel, 8 to 12 ton		32.40	585	1,760	5,275	611.20	
	7005	Electric, 10 ton		26.55	670	2,010	6,025	614.40	
	7010	Muck cars, 1/2 C.Y. capacity		2.05	24.50	74	222	31.20	
	7020	1 C.Y. capacity		2.30	32.50	98	294	38	
	7030	2 C.Y. capacity		2.45	36.50	110	330	41.60	
	7040	Side dump, 2 C.Y. capacity		2.65	45	135	405	48.20	
	7050	3 C.Y. capacity		3.55	51.50	155	465	59.40	
	7060	5 C.Y. capacity		5.10	65	195	585	79.80	
	7100	Ventilating blower for tunnel, 7-1/2 H.P.		2.05	51.50	155	465	47.40	
	7110	10 H.P.		2.22	53.50	160	480	49.75	
	7120	20 H.P.		3.43	69.50	208	625	69.05	
	7140	40 H.P.		5.59	98.50	295	885	103.70	
	7160	60 H.P.		8.54	152	455	1,375	159.30	
	7175	75 H.P.		11.25	207	620	1,850	214	
	7180	200 H.P.		22.56	305	910	2,725	362.50	
	7800	Windrow loader, elevating		55.95	1,325	3,960	11,900	1,240	
60	0010	LIFTING AND HOISTING EQUIPMENT RENTAL without operators	R015433 -10						60
	0120	Aerial lift truck, 2 person, to 80'	Ea.	26.75	715	2,145	6,425	643	
	0140	Boom work platform, 40' snorkel	R015433 -15	16.10	277	830	2,500	294.80	
	0150	Crane, flatbed mounted, 3 ton capacity		16.55	193	580	1,750	248.40	
	0200	Crane, climbing, 106' jib, 6000 lb. capacity, 410 fpm	R312316 -45	37.76	1,625	4,860	14,600	1,274	
	0300	101' jib, 10,250 lb. capacity, 270 fpm		44.26	2,050	6,160	18,500	1,586	
	0500	Tower, static, 130' high, 106' jib, 6200 lb. capacity at 400 fpm		41.56	1,875	5,620	16,900	1,456	
	0600	Crawler mounted, lattice boom, 1/2 C.Y., 15 tons at 12' radius		37.52	640	1,920	5,750	684.15	
	0700	3/4 C.Y., 20 tons at 12' radius		50.03	800	2,400	7,200	880.25	
	0800	1 C.Y., 25 tons at 12' radius		66.70	1,075	3,195	9,575	1,173	
	0900	1-1/2 C.Y., 40 tons at 12' radius		66.70	1,075	3,225	9,675	1,179	
	1000	2 C.Y., 50 tons at 12' radius		70.70	1,250	3,765	11,300	1,319	
	1100	3 C.Y., 75 tons at 12' radius		75.65	1,475	4,435	13,300	1,492	
	1200	100 ton capacity, 60' boom		85.65	1,700	5,090	15,300	1,703	
	1300	165 ton capacity, 60' boom		109.15	2,000	5,980	17,900	2,069	
	1400	200 ton capacity, 70' boom		132.10	2,500	7,480	22,400	2,553	
	1500	350 ton capacity, 80' boom		184.60	3,725	11,210	33,600	3,719	
	1600	Truck mounted, lattice boom, 6 x 4, 20 tons at 10' radius		37.31	1,100	3,310	9,925	960.50	
	1700	25 tons at 10' radius		40.35	1,200	3,610	10,800	1,045	
	1800	8 x 4, 30 tons at 10' radius		43.85	1,275	3,840	11,500	1,119	
	1900	40 tons at 12' radius		46.92	1,325	4,010	12,000	1,177	
	2000	60 tons at 15' radius		53.24	1,425	4,240	12,700	1,274	
	2050	82 tons at 15' radius		60.06	1,525	4,540	13,600	1,388	
	2100	90 tons at 15' radius		67.57	1,650	4,940	14,800	1,529	
	2200	115 tons at 15' radius		76.34	1,850	5,520	16,600	1,715	
	2300	150 tons at 18' radius		84.40	1,950	5,815	17,400	1,838	
	2350	165 tons at 18' radius		90.25	2,050	6,160	18,500	1,954	
	2400	Truck mounted, hydraulic, 12 ton capacity		43.00	530	1,595	4,775	663	

01 54 | Construction Aids

01 54 33 Equipment Rental			UNIT	HOURLY OPER COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
50	2500	25 ton capacity	Ea.	45.35	640	1,915	5,750	745.80	60
	2550	33 ton capacity		45.90	655	1,960	5,875	759.20	
	2560	40 ton capacity		59.35	765	2,290	6,875	932.80	
	2600	55 ton capacity		77.50	860	2,585	7,750	1,137	
	2700	80 ton capacity		101.35	1,400	4,205	12,600	1,652	
	2720	100 ton capacity		94.95	1,450	4,325	13,000	1,625	
	2740	120 ton capacity		109.95	1,550	4,665	14,000	1,813	
	2760	150 ton capacity		128.55	2,050	6,135	18,400	2,255	
	2800	Self-propelled, 4 x 4, with telescoping boom, 5 ton		17.75	230	690	2,075	280	
	2900	12-1/2 ton capacity		32.65	365	1,100	3,300	481.20	
	3000	15 ton capacity		33.35	385	1,160	3,475	498.80	
	3050	20 ton capacity		36.30	450	1,350	4,050	560.40	
	3100	25 ton capacity		37.90	505	1,520	4,550	607.20	
	3150	40 ton capacity		46.50	570	1,705	5,125	713	
	3200	Derricks, guy, 20 ton capacity, 60' boom, 75' mast		27.18	395	1,190	3,575	455.45	
	3300	100' boom, 115' mast		42.63	685	2,050	6,150	751.05	
	3400	Stiffleg, 20 ton capacity, 70' boom, 37' mast		29.70	515	1,550	4,650	547.60	
	3500	100' boom, 47' mast		45.64	825	2,480	7,450	861.10	
	3550	Helicopter, small, lift to 1250 lb. maximum, w/pilot		100.87	3,200	9,610	28,800	2,729	
	3600	Hoists, chain type, overhead, manual, 3/4 ton		.10	.33	1	3	1	
	3900	10 ton		.75	6	18	54	9.60	
	4000	Hoist and tower, 5000 lb. cap., portable electric, 40' high		4.77	228	685	2,050	175.15	
	4100	For each added 10' section, add		.11	18	54	162	11.70	
	4200	Hoist and single tubular tower, 5000 lb. electric, 100' high		6.47	320	957	2,875	243.15	
	4300	For each added 6'-6" section, add		.19	31	93	279	20.10	
	4400	Hoist and double tubular tower, 5000 lb., 100' high		6.95	350	1,054	3,150	266.40	
	4500	For each added 6'-6" section, add		.21	34.50	103	310	22.30	
	4550	Hoist and tower, mast type, 6000 lb., 100' high		7.48	365	1,093	3,275	278.45	
	4570	For each added 10' section, add		.13	21.50	64	192	13.85	
	4600	Hoist and tower, personnel, electric, 2000 lb., 100' @ 125 fpm		15.90	970	2,910	8,725	709.20	
	4700	3000 lb., 100' @ 200 fpm		18.13	1,100	3,290	9,875	803.05	
	4800	3000 lb., 150' @ 300 fpm		20.13	1,225	3,690	11,100	899.05	
	4900	4000 lb., 100' @ 300 fpm		20.82	1,250	3,760	11,300	918.55	
	5000	6000 lb., 100' @ 275 fpm	▼	22.44	1,325	3,950	11,900	969.50	
	5100	For added heights up to 500', add	L.F.	.01	1.67	5	15	1.10	
	5200	Jacks, hydraulic, 20 ton	Ea.	.05	2	6	18	1.60	
	5500	100 ton		.40	11.65	35	105	10.20	
	6100	Jacks, hydraulic, climbing w/50' jackrods, control console, 30 ton cap.		1.97	131	394	1,175	94.55	
	6150	For each added 10' jackrod section, add		.05	3.33	10	30	2.40	
	6300	50 ton capacity		3.17	211	633	1,900	151.95	
6350	For each added 10' jackrod section, add		.06	4	12	36	2.90		
6500	125 ton capacity		8.30	555	1,660	4,975	398.40		
6550	For each added 10' jackrod section, add		.57	37.50	113	340	27.15		
6600	Cable jack, 10 ton capacity with 200' cable		1.65	110	329	985	79		
6650	For each added 50' of cable, add	▼	.20	13	39	117	9.40		
70	0010	WELLPOINT EQUIPMENT RENTAL without operators	R015433 -10						70
	0020	Based on 2 months rental							
	0100	Combination jetting & wellpoint pump, 60 H.P. diesel	Ea.	18.14	325	976	2,925	340.30	
	0200	High pressure gas jet pump, 200 H.P., 300 psi	"	43.54	278	834	2,500	515.10	
	0300	Discharge pipe, 8" diameter	L.F.	.01	.53	1.59	4.77	.40	
	0350	12" diameter		.01	.78	2.33	7	.55	
	0400	Header pipe, flows up to 150 GPM, 4" diameter		.01	.48	1.44	4.32	.35	
	0500	400 GPM, 6" diameter		.01	.56	1.69	5.05	.40	
	0600	800 GPM, 8" diameter		.01	.78	2.33	7	.55	
	0700	1500 GPM, 10" diameter		.01	.82	2.46	7.40	.55	
	0800	2500 GPM, 12" diameter		.02	1.55	4.65	13.95	1.10	
	0900	4500 GPM, 16" diameter	▼	.03	1.98	5.95	17.85	1.45	

01 54 | Construction Aids

01 54 33 Equipment Rental			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
70	0950	For quick coupling aluminum and plastic pipe, add	L.F.	.03	2.05	6.16	18.50	1.45	70
	1100	Wellpoint, 25' long, with fittings & riser pipe, 1-1/2" or 2" diameter	✓	.06	4.10	12.29	37	2.95	
	1200	Wellpoint pump, diesel powered, 4" suction, 20 H.P.		7.71	188	563	1,700	174.30	
	1300	6" suction, 30 H.P.		10.54	233	698	2,100	223.90	
	1400	8" suction, 40 H.P.		14.24	320	957	2,875	305.30	
	1500	10" suction, 75 H.P.		21.97	375	1,119	3,350	399.55	
	1600	12" suction, 100 H.P.		31.24	590	1,770	5,300	603.90	
	1700	12" suction, 175 H.P.	↓	46.78	655	1,970	5,900	768.25	
80	0010	MARINE EQUIPMENT RENTAL without operators							80
	0200	Barge, 400 Ton, 30' wide x 90' long	R015433 -10	Ea.	17.50	1,075	3,205	9,625	
	0240	800 Ton, 45' wide x 90' long			21.20	1,300	3,900	11,700	
	2000	Tugboat, diesel, 100 H.P.			38.95	217	650	1,950	
	2040	250 H.P.			81.55	395	1,185	3,550	
	2080	380 H.P.			160.00	1,175	3,545	10,600	
	3000	Small work boat, gas, 16-foot, 50 H.P.			19.15	60	180	540	
	4000	Large, diesel, 48-foot, 200 H.P.	↓		90.80	1,250	3,745	11,200	

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew A-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Concrete Saw, Gas Manual		84.00		92.40	10.50	11.55
8 L.H., Daily Totals		\$377.20		\$544.80	\$47.15	\$68.10
Crew A-1A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Skilled Worker	\$47.30	\$378.40	\$73.25	\$586.00	\$47.30	\$73.25
1 Shot Blaster, 20"		214.40		235.84	26.80	29.48
8 L.H., Daily Totals		\$592.80		\$821.84	\$74.10	\$102.73
Crew A-1B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Concrete Saw		175.20		192.72	21.90	24.09
8 L.H., Daily Totals		\$468.40		\$645.12	\$58.55	\$80.64
Crew A-1C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Chain Saw, Gas, 18"		31.20		34.32	3.90	4.29
8 L.H., Daily Totals		\$324.40		\$486.72	\$40.55	\$60.84
Crew A-1D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Vibrating Plate, Gas, 18"		35.80		39.38	4.47	4.92
8 L.H., Daily Totals		\$329.00		\$491.78	\$41.13	\$61.47
Crew A-1E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Vibrating Plate, Gas, 21"		46.00		50.56	5.75	6.33
8 L.H., Daily Totals		\$339.20		\$503.00	\$42.40	\$62.88
Crew A-1F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Rammer/Tamper, Gas, 8"		49.60		54.56	6.20	6.82
8 L.H., Daily Totals		\$342.80		\$506.96	\$42.85	\$63.37
Crew A-1G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Rammer/Tamper, Gas, 15"		56.00		61.60	7.00	7.70
8 L.H., Daily Totals		\$349.20		\$514.00	\$43.65	\$64.25
Crew A-1H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Exterior Steam Cleaner		75.60		83.16	9.45	10.40
8 L.H., Daily Totals		\$368.80		\$535.56	\$46.10	\$66.94
Crew A-1J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Cultivator, Walk-Behind, 5 H.P.		57.45		63.20	7.18	7.90
8 L.H., Daily Totals		\$350.65		\$515.60	\$43.83	\$64.45
Crew A-1K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Cultivator, Walk-Behind, 8 H.P.		81.40		89.54	10.18	11.19
8 L.H., Daily Totals		\$374.60		\$541.94	\$46.83	\$67.74
Crew A-1M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Snow Blower, Walk-Behind		60.55		66.61	7.57	8.33
8 L.H., Daily Totals		\$353.75		\$519.01	\$44.22	\$64.88

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew A-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.60	\$56.27
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22	11.26	12.38
24 L.H., Daily Totals		\$1148.60		\$1647.62	\$47.86	\$68.65
Crew A-2A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.60	\$56.27
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22		
1 Concrete Saw		175.20		192.72	18.56	20.41
24 L.H., Daily Totals		\$1323.80		\$1840.34	\$55.16	\$76.68
Crew A-2B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (light)	\$36.50	\$292.00	\$55.70	\$445.60	\$36.50	\$55.70
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22	33.77	37.15
8 L.H., Daily Totals		\$562.20		\$742.82	\$70.28	\$92.85
Crew A-3A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (light)	\$36.50	\$292.00	\$55.70	\$445.60	\$36.50	\$55.70
1 Pickup Truck, 4 x 4, 3/4 Ton		168.40		185.24	21.05	23.16
8 L.H., Daily Totals		\$460.40		\$630.84	\$57.55	\$78.86
Crew A-3B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$43.23	\$65.72
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Dump Truck, 12 C.Y., 400 H.P.		692.20		761.42		
1 F.E. Loader, W.M., 2.5 C.Y.		522.80		575.08	75.94	83.53
16 L.H., Daily Totals		\$1906.60		\$2388.10	\$119.16	\$149.26
Crew A-3C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Loader, Skid Steer, 78 H.P.		308.80		339.68	38.60	42.46
8 L.H., Daily Totals		\$685.20		\$910.48	\$85.65	\$113.81
Crew A-3D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (light)	\$36.50	\$292.00	\$55.70	\$445.60	\$36.50	\$55.70
1 Pickup Truck, 4 x 4, 3/4 Ton		168.40		185.24		
1 Flatbed Trailer, 25 Ton		113.60		124.96	35.25	38.77
8 L.H., Daily Totals		\$574.00		\$755.80	\$71.75	\$94.47
Crew A-3E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.90	\$66.75
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Pickup Truck, 4 x 4, 3/4 Ton		168.40		185.24	10.53	11.58
16 L.H., Daily Totals		\$870.80		\$1253.24	\$54.42	\$78.33
Crew A-3F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.90	\$66.75
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Pickup Truck, 4 x 4, 3/4 Ton		168.40		185.24		
1 Truck Tractor, 6x4, 380 H.P.		612.80		674.08		
1 Lowbed Trailer, 75 Ton		219.80		241.78	62.56	68.82
16 L.H., Daily Totals		\$1703.40		\$2169.10	\$106.46	\$135.57

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew A-3G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.90	\$66.75
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Pickup Truck, 4 x 4, 3/4 Ton		168.40		185.24		
1 Truck Tractor, 6x4, 450 H.P.		742.40		816.64		
1 Lowbed Trailer, 75 Ton		219.80		241.78	70.66	77.73
16 L.H., Daily Totals		\$1833.00		\$2311.66	\$114.56	\$144.48
Crew A-3H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$50.25	\$76.20
1 Hyd. Crane, 12 Ton (Daily)		874.00		961.40	109.25	120.18
8 L.H., Daily Totals		\$1276.00		\$1571.00	\$159.50	\$196.38
Crew A-3I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$50.25	\$76.20
1 Hyd. Crane, 25 Ton (Daily)		1003.00		1103.30	125.38	137.91
8 L.H., Daily Totals		\$1405.00		\$1712.90	\$175.63	\$214.11
Crew A-3J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$50.25	\$76.20
1 Hyd. Crane, 40 Ton (Daily)		1240.00		1364.00	155.00	170.50
8 L.H., Daily Totals		\$1642.00		\$1973.60	\$205.25	\$246.70
Crew A-3K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$46.90	\$71.10
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 55 Ton (Daily)		1480.00		1628.00		
1 P/U Truck, 3/4 Ton (Daily)		182.00		200.20	103.88	114.26
16 L.H., Daily Totals		\$2412.40		\$2965.80	\$150.78	\$185.36
Crew A-3L	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$46.90	\$71.10
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 80 Ton (Daily)		2211.00		2432.10		
1 P/U Truck, 3/4 Ton (Daily)		182.00		200.20	149.56	164.52
16 L.H., Daily Totals		\$3143.40		\$3769.90	\$196.46	\$235.62
Crew A-3M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$46.90	\$71.10
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 100 Ton (Daily)		2200.00		2420.00		
1 P/U Truck, 3/4 Ton (Daily)		182.00		200.20	148.88	163.76
16 L.H., Daily Totals		\$3132.40		\$3757.80	\$195.78	\$234.86
Crew A-3N	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$50.25	\$76.20
1 Tower Crane (monthly)		1100.00		1210.00	137.50	151.25
8 L.H., Daily Totals		\$1502.00		\$1819.60	\$187.75	\$227.45
Crew A-3P	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 A.T. Forklift, 42' lift		531.60		584.76	66.45	73.09
8 L.H., Daily Totals		\$908.00		\$1155.56	\$113.50	\$144.44
Crew A-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Carpenters	\$45.85	\$733.60	\$70.75	\$1132.00	\$43.75	\$67.00
1 Painter Ordinary	39.55	316.40	59.50	476.00		
24 L.H., Daily Totals		\$1050.00		\$1608.00	\$43.75	\$67.00

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew A-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.63	\$56.46
.25 Truck Driver (light)	36.50	73.00	55.70	111.40		
.25 Flatbed Truck, Gas, 1.5 Ton		67.55		74.31	3.75	4.13
18 L.H., Daily Totals		\$726.95		\$1090.51	\$40.39	\$60.58
Crew A-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Instrument Man	\$47.30	\$378.40	\$73.25	\$586.00	\$45.67	\$70.13
1 Rodman/Chainman	44.05	352.40	67.00	536.00		
1 Level, Electronic		71.30		78.43	4.46	4.90
16 L.H., Daily Totals		\$802.10		\$1200.43	\$50.13	\$75.03
Crew A-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Chief of Party	\$59.90	\$479.20	\$92.15	\$737.20	\$50.42	\$77.47
1 Instrument Man	47.30	378.40	73.25	586.00		
1 Rodman/Chainman	44.05	352.40	67.00	536.00		
1 Level, Electronic		71.30		78.43	2.97	3.27
24 L.H., Daily Totals		\$1281.30		\$1937.63	\$53.39	\$80.73
Crew A-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Chief of Party	\$59.90	\$479.20	\$92.15	\$737.20	\$48.83	\$74.85
1 Instrument Man	47.30	378.40	73.25	586.00		
2 Rodmen/Chainmen	44.05	704.80	67.00	1072.00		
1 Level, Electronic		71.30		78.43	2.23	2.45
32 L.H., Daily Totals		\$1633.70		\$2473.63	\$51.05	\$77.30
Crew A-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Asbestos Foreman	\$51.65	\$413.20	\$80.35	\$642.80	\$51.21	\$79.69
7 Asbestos Workers	51.15	2864.40	79.60	4457.60		
64 L.H., Daily Totals		\$3277.60		\$5100.40	\$51.21	\$79.69
Crew A-10A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Asbestos Foreman	\$51.65	\$413.20	\$80.35	\$642.80	\$51.32	\$79.85
2 Asbestos Workers	51.15	818.40	79.60	1273.60		
24 L.H., Daily Totals		\$1231.60		\$1916.40	\$51.32	\$79.85
Crew A-10B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Asbestos Foreman	\$51.65	\$413.20	\$80.35	\$642.80	\$51.27	\$79.79
3 Asbestos Workers	51.15	1227.60	79.60	1910.40		
32 L.H., Daily Totals		\$1640.80		\$2553.20	\$51.27	\$79.79
Crew A-10C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Asbestos Workers	\$51.15	\$1227.60	\$79.60	\$1910.40	\$51.15	\$79.60
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22	11.26	12.38
24 L.H., Daily Totals		\$1497.80		\$2207.62	\$62.41	\$91.98
Crew A-10E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Asbestos Workers	\$51.15	\$818.40	\$79.60	\$1273.60	\$49.02	\$75.35
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Hydraulic Crane, 33 Ton		759.20		835.12	23.73	26.10
32 L.H., Daily Totals		\$2328.00		\$3246.32	\$72.75	\$101.45
Crew A-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Asbestos Foreman	\$51.65	\$413.20	\$80.35	\$642.80	\$51.21	\$79.69
7 Asbestos Workers	51.15	2864.40	79.60	4457.60		
2 Chip. Hammers, 12 Lb., Elec.		40.00		44.00	.63	.69
64 L.H., Daily Totals		\$3317.60		\$5144.40	\$51.84	\$80.38

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew A-12						
1 Asbestos Foreman	\$51.65	\$413.20	\$80.35	\$642.80	\$51.21	\$79.69
7 Asbestos Workers	51.15	2864.40	79.60	4457.60		
1 Trk-Mtd Vac, 14 CY, 1500 Gal.		518.90		570.79		
1 Flatbed Truck, 20,000 GW		253.40		278.74	12.07	13.27
64 L.H., Daily Totals		\$4049.90		\$5949.93	\$63.28	\$92.97
Crew A-13						
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Trk-Mtd Vac, 14 CY, 1500 Gal.		518.90		570.79		
1 Flatbed Truck, 20,000 GW		253.40		278.74	96.54	106.19
8 L.H., Daily Totals		\$1148.70		\$1420.33	\$143.59	\$177.54
Crew B-1						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.32	\$57.58
2 Laborers	36.65	586.40	56.55	904.80		
24 L.H., Daily Totals		\$895.60		\$1382.00	\$37.32	\$57.58
Crew B-1A						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.32	\$57.58
2 Laborers	36.65	586.40	56.55	904.80		
2 Cutting Torches		22.80		25.08		
2 Sets of Gases		304.00		334.40	13.62	14.98
24 L.H., Daily Totals		\$1222.40		\$1741.48	\$50.93	\$72.56
Crew B-1B						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.55	\$62.24
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
2 Cutting Torches		22.80		25.08		
2 Sets of Gases		304.00		334.40		
1 Hyd. Crane, 12 Ton		663.00		729.30	30.93	34.02
32 L.H., Daily Totals		\$2287.40		\$3080.38	\$71.48	\$96.26
Crew B-1C						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.32	\$57.58
2 Laborers	36.65	586.40	56.55	904.80		
1 Aerial Lift Truck, 60' Boom		456.00		501.60	19.00	20.90
24 L.H., Daily Totals		\$1351.60		\$1883.60	\$56.32	\$78.48
Crew B-1D						
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.65	\$56.55
1 Small Work Boat, Gas, 50 H.P.		189.20		208.12		
1 Pressure Washer, 7 GPM		86.00		94.60	17.20	18.92
16 L.H., Daily Totals		\$861.60		\$1207.52	\$53.85	\$75.47
Crew B-1E						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.15	\$57.33
3 Laborers	36.65	879.60	56.55	1357.20		
1 Work Boat, Diesel, 200 H.P.		1475.00		1622.50		
2 Pressure Washer, 7 GPM		172.00		189.20	51.47	56.62
32 L.H., Daily Totals		\$2835.80		\$3646.10	\$88.62	\$113.94
Crew B-1F						
2 Skilled Workers	\$47.30	\$756.80	\$73.25	\$1172.00	\$43.75	\$67.68
1 Laborer	36.65	293.20	56.55	452.40		
1 Small Work Boat, Gas, 50 H.P.		189.20		208.12		
1 Pressure Washer, 7 GPM		86.00		94.60	11.47	12.61
24 L.H., Daily Totals		\$1325.20		\$1927.12	\$55.22	\$80.30

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-1G						
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.65	\$56.55
1 Small Work Boat, Gas, 50 H.P.		189.20		208.12	11.82	13.01
16 L.H., Daily Totals		\$775.60		\$1112.92	\$48.48	\$69.56
Crew B-1H						
2 Skilled Workers	\$47.30	\$756.80	\$73.25	\$1172.00	\$43.75	\$67.68
1 Laborer	36.65	293.20	56.55	452.40		
1 Small Work Boat, Gas, 50 H.P.		189.20		208.12	7.88	8.67
24 L.H., Daily Totals		\$1239.20		\$1832.52	\$51.63	\$76.36
Crew B-1J						
1 Labor Foreman (inside)	\$37.15	\$297.20	\$57.30	\$458.40	\$36.90	\$56.92
1 Laborer	36.65	293.20	56.55	452.40		
16 L.H., Daily Totals		\$590.40		\$910.80	\$36.90	\$56.92
Crew B-1K						
1 Carpenter Foreman (inside)	\$46.35	\$370.80	\$71.50	\$572.00	\$46.10	\$71.13
1 Carpenter	45.85	366.80	70.75	566.00		
16 L.H., Daily Totals		\$737.60		\$1138.00	\$46.10	\$71.13
Crew B-2						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.05	\$57.17
4 Laborers	36.65	1172.80	56.55	1809.60		
40 L.H., Daily Totals		\$1482.00		\$2286.80	\$37.05	\$57.17
Crew B-2A						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.32	\$57.58
2 Laborers	36.65	586.40	56.55	904.80		
1 Aerial Lift Truck, 60' Boom		456.00		501.60	19.00	20.90
24 L.H., Daily Totals		\$1351.60		\$1883.60	\$56.32	\$78.48
Crew B-3						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.33	\$60.25
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Crawler Loader, 3 C.Y.		1191.00		1310.10		
2 Dump Trucks, 12 C.Y., 400 H.P.		1384.40		1522.84	53.65	59.02
48 L.H., Daily Totals		\$4463.00		\$5724.94	\$92.98	\$119.27
Crew B-3A						
4 Laborers	\$36.65	\$1172.80	\$56.55	\$1809.60	\$39.10	\$60.07
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Hyd. Excavator, 1.5 C.Y.		1031.00		1134.10	25.77	28.35
40 L.H., Daily Totals		\$2595.00		\$3536.90	\$64.88	\$88.42
Crew B-3B						
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$39.94	\$61.14
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Backhoe Loader, 80 H.P.		397.60		437.36		
1 Dump Truck, 12 C.Y., 400 H.P.		692.20		761.42	34.06	37.46
32 L.H., Daily Totals		\$2367.80		\$3155.18	\$73.99	\$98.60
Crew B-3C						
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$39.71	\$60.95
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Crawler Loader, 4 C.Y.		1532.00		1685.20	47.88	52.66
32 L.H., Daily Totals		\$2802.80		\$3635.60	\$87.59	\$113.61

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-4						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.13	\$57.19
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Truck Tractor, 220 H.P.		366.40		403.04		
1 Flatbed Trailer, 40 Ton		152.00		167.20	10.80	11.88
48 L.H., Daily Totals		\$2300.80		\$3315.44	\$47.93	\$69.07
Crew B-5						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.44	\$62.02
4 Laborers	36.65	1172.80	56.55	1809.60		
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Air Compressor, 250 cfm		202.40		222.64		
2 Breakers, Pavement, 60 lb.		19.60		21.56		
2 -50' Air Hoses, 1.5"		11.60		12.76		
1 Crawler Loader, 3 C.Y.		1191.00		1310.10	25.44	27.98
56 L.H., Daily Totals		\$3689.00		\$5040.26	\$65.88	\$90.00
Crew B-5A						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.88	\$61.10
6 Laborers	36.65	1759.20	56.55	2714.40		
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Air Compressor, 365 cfm		264.80		291.28		
2 Breakers, Pavement, 60 lb.		19.60		21.56		
8 -50' Air Hoses, 1"		32.80		36.08		
2 Dump Trucks, 8 C.Y., 220 H.P.		834.40		917.84	12.00	13.20
96 L.H., Daily Totals		\$4979.60		\$7132.36	\$51.87	\$74.30
Crew B-5B						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Powderman	\$47.30	\$378.40	\$73.25	\$586.00	\$42.96	\$65.58
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
3 Truck Drivers (heavy)	37.55	901.20	57.30	1375.20		
1 F.E. Loader, W.M., 2.5 C.Y.		522.80		575.08		
3 Dump Trucks, 12 C.Y., 400 H.P.		2076.60		2284.26		
1 Air Compressor, 365 CFM		264.80		291.28	59.67	65.64
48 L.H., Daily Totals		\$4926.20		\$6298.22	\$102.63	\$131.21
Crew B-5C						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$40.97	\$62.58
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
2 Dump Trucks, 12 C.Y., 400 H.P.		1384.40		1522.84		
1 Crawler Loader, 4 C.Y.		1532.00		1685.20		
1 S.P. Crane, 4x4, 25 Ton		607.20		667.92	55.06	60.56
64 L.H., Daily Totals		\$6145.60		\$7880.76	\$96.03	\$123.14
Crew B-5D						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.08	\$61.43
4 Laborers	36.65	1172.80	56.55	1809.60		
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Air Compressor, 250 cfm		202.40		222.64		
2 Breakers, Pavement, 60 lb.		19.60		21.56		
2 -50' Air Hoses, 1.5"		11.60		12.76		
1 Crawler Loader, 3 C.Y.		1191.00		1310.10		
1 Dump Truck, 12 C.Y., 400 H.P.		692.20		761.42	33.08	36.38
64 L.H., Daily Totals		\$4681.60		\$6260.08	\$73.15	\$97.81

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-6						
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$40.12	\$61.48
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Backhoe Loader, 48 H.P.		365.20		401.72	15.22	16.74
24 L.H., Daily Totals		\$1328.00		\$1877.32	\$55.33	\$78.22
Crew B-6A						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$154.60	\$59.65	\$238.60	\$41.95	\$64.21
1 Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Vacuum Truck, 5000 Gal.		360.15		396.17	18.01	19.81
20 L.H., Daily Totals		\$1199.15		\$1680.37	\$59.96	\$84.02
Crew B-6C						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Labor Foremen (outside)	\$38.65	\$618.40	\$59.65	\$954.40	\$37.32	\$57.58
4 Laborers	36.65	1172.80	56.55	1809.60		
1 S.P. Crane, 4x4, 5 Ton		280.00		308.00		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22		
1 Butt Fusion Mach., 4"-12" diam.		381.80		419.98	19.42	21.36
48 L.H., Daily Totals		\$2723.20		\$3789.20	\$56.73	\$78.94
Crew B-6C						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Labor Foremen (outside)	\$38.65	\$618.40	\$59.65	\$954.40	\$37.32	\$57.58
4 Laborers	36.65	1172.80	56.55	1809.60		
1 S.P. Crane, 4x4, 12 Ton		481.20		529.32		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Butt Fusion Mach., 8"-24" diam.		828.40		911.24	34.22	37.64
48 L.H., Daily Totals		\$3433.80		\$4570.86	\$71.54	\$95.23
Crew B-7						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.02	\$60.00
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Brush Chipper, 12", 130 H.P.		396.60		436.26		
1 Crawler Loader, 3 C.Y.		1191.00		1310.10		
2 Chain Saws, Gas, 36" Long		90.00		99.00	34.95	38.45
48 L.H., Daily Totals		\$3550.80		\$4725.36	\$73.97	\$98.44
Crew B-7A						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$40.12	\$61.48
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Rake w/Tractor		347.90		382.69		
2 Chain Saw, Gas, 18"		62.40		68.64	17.10	18.81
24 L.H., Daily Totals		\$1373.10		\$1926.93	\$57.21	\$80.29
Crew B-7B						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.81	\$59.61
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Brush Chipper, 12", 130 H.P.		396.60		436.26		
1 Crawler Loader, 3 C.Y.		1191.00		1310.10		
2 Chain Saws, Gas, 36" Long		90.00		99.00		
1 Dump Truck, 8 C.Y., 220 H.P.		417.20		458.92	37.41	41.15
56 L.H., Daily Totals		\$4268.40		\$5642.68	\$76.22	\$100.76

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-7C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.81	\$59.61
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Brush Chipper, 12", 130 H.P.		396.60		436.26		
1 Crawler Loader, 3 C.Y.		1191.00		1310.10		
2 Chain Saws, Gas, 36" Long		90.00		99.00		
1 Dump Truck, 12 C.Y., 400 H.P.		692.20		761.42	42.32	46.55
56 L.H., Daily Totals		\$4543.40		\$5945.18	\$81.13	\$106.16
Crew B-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.05	\$62.71
2 Laborers	36.65	586.40	56.55	904.80		
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Hyd. Crane, 25 Ton		745.80		820.38		
1 Crawler Loader, 3 C.Y.		1191.00		1310.10		
2 Dump Trucks, 12 C.Y., 400 H.P.		1384.40		1522.84	51.89	57.08
64 L.H., Daily Totals		\$5948.40		\$7666.52	\$92.94	\$119.79
Crew B-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.05	\$57.17
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Air Compressor, 250 cfm		202.40		222.64		
2 Breakers, Pavement, 60 lb.		19.60		21.56		
2 -50' Air Hoses, 1.5"		11.60		12.76	5.84	6.42
40 L.H., Daily Totals		\$1715.60		\$2543.76	\$42.89	\$63.59
Crew B-9A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.95	\$56.80
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Water Tank Trailer, 5000 Gal.		141.60		155.76		
1 Truck Tractor, 220 H.P.		366.40		403.04		
2 -50' Discharge Hoses, 3"		3.00		3.30	21.29	23.42
24 L.H., Daily Totals		\$1397.80		\$1925.30	\$58.24	\$80.22
Crew B-9B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.95	\$56.80
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
2 -50' Discharge Hoses, 3"		3.00		3.30		
1 Water Tank Trailer, 5000 Gal.		141.60		155.76		
1 Truck Tractor, 220 H.P.		366.40		403.04		
1 Pressure Washer		69.40		76.34	24.18	26.60
24 L.H., Daily Totals		\$1467.20		\$2001.64	\$61.13	\$83.40
Crew B-9D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.05	\$57.17
4 Common Laborers	36.65	1172.80	56.55	1809.60		
1 Air Compressor, 250 cfm		202.40		222.64		
2 -50' Air Hoses, 1.5"		11.60		12.76		
2 Air Powered Tampers		52.40		57.64	6.66	7.33
40 L.H., Daily Totals		\$1748.40		\$2579.84	\$43.71	\$64.50
Crew B-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
12 L.H., Daily Totals		\$537.80		\$819.40	\$44.82	\$68.28

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-10A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Roller, 2-Drum, W.B., 7.5 H.P.		182.80		201.08	15.23	16.76
12 L.H., Daily Totals		\$720.60		\$1020.48	\$60.05	\$85.04
Crew B-10B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 200 H.P.		1325.00		1457.50	110.42	121.46
12 L.H., Daily Totals		\$1862.80		\$2276.90	\$155.23	\$189.74
Crew B-10C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 200 H.P.		1325.00		1457.50		
1 Vibratory Roller, Towed, 23 Ton		412.00		453.20	144.75	159.22
12 L.H., Daily Totals		\$2274.80		\$2730.10	\$189.57	\$227.51
Crew B-10D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 200 H.P.		1325.00		1457.50		
1 Sheepsft. Roller, Towed		443.80		488.18	147.40	162.14
12 L.H., Daily Totals		\$2306.60		\$2765.08	\$192.22	\$230.42
Crew B-10E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Tandem Roller, 5 Ton		159.00		174.90	13.25	14.57
12 L.H., Daily Totals		\$696.80		\$994.30	\$58.07	\$82.86
Crew B-10F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Tandem Roller, 10 Ton		242.00		266.20	20.17	22.18
12 L.H., Daily Totals		\$779.80		\$1085.60	\$64.98	\$90.47
Crew B-10G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Sheepsfoot Roller, 240 H.P.		1218.00		1339.80	101.50	111.65
12 L.H., Daily Totals		\$1755.80		\$2159.20	\$146.32	\$179.93
Crew B-10H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Diaphragm Water Pump, 2"		72.00		79.20		
1 -20' Suction Hose, 2"		1.95		2.15		
2 -50' Discharge Hoses, 2"		1.80		1.98	6.31	6.94
12 L.H., Daily Totals		\$613.55		\$902.73	\$51.13	\$75.23
Crew B-10I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Diaphragm Water Pump, 4"		115.80		127.38		
1 -20' Suction Hose, 4"		3.25		3.58		
2 -50' Discharge Hoses, 4"		4.70		5.17	10.31	11.34
12 L.H., Daily Totals		\$661.55		\$955.52	\$55.13	\$79.63

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-10J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Centrifugal Water Pump, 3"		78.80		86.68		
1 -20' Suction Hose, 3"		2.85		3.13		
2 -50' Discharge Hoses, 3"		3.00		3.30	7.05	7.76
12 L.H., Daily Totals		\$622.45		\$912.51	\$51.87	\$76.04
Crew B-10Y	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Centr. Water Pump, 6"		340.80		374.88		
1 -20' Suction Hose, 6"		11.50		12.65		
2 -50' Discharge Hoses, 6"		12.20		13.42	30.38	33.41
12 L.H., Daily Totals		\$902.30		\$1220.35	\$75.19	\$101.70
Crew B-10L	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 80 H.P.		481.00		529.10	40.08	44.09
12 L.H., Daily Totals		\$1018.80		\$1348.50	\$84.90	\$112.38
Crew B-10M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 300 H.P.		1817.00		1998.70	151.42	166.56
12 L.H., Daily Totals		\$2354.80		\$2818.10	\$196.23	\$234.84
Crew B-10N	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 F.E. Loader, T.M., 1.5 C.Y.		522.80		575.08	43.57	47.92
12 L.H., Daily Totals		\$1060.60		\$1394.48	\$88.38	\$116.21
Crew B-100	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 F.E. Loader, T.M., 2.25 C.Y.		959.80		1055.78	79.98	87.98
12 L.H., Daily Totals		\$1497.60		\$1875.18	\$124.80	\$156.26
Crew B-10Y	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Crawler Loader, 3 C.Y.		1191.00		1310.10	99.25	109.18
12 L.H., Daily Totals		\$1728.80		\$2129.50	\$144.07	\$177.46
Crew B-10Q	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Crawler Loader, 4 C.Y.		1532.00		1685.20	127.67	140.43
12 L.H., Daily Totals		\$2069.80		\$2504.60	\$172.48	\$208.72
Crew B-10R	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 F.E. Loader, W.M. 1 C.Y.		295.20		324.72	24.60	27.06
12 L.H., Daily Totals		\$833.00		\$1144.12	\$69.42	\$95.34

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-10S	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 F.E. Loader, W.M., 1.5 C.Y.		373.40		410.74	31.12	34.23
12 L.H., Daily Totals		\$911.20		\$1230.14	\$75.93	\$102.51
Crew B-10T	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 F.E. Loader, W.M., 2.5 C.Y.		522.80		575.08	43.57	47.92
12 L.H., Daily Totals		\$1060.60		\$1394.48	\$88.38	\$116.21
Crew B-10U	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 F.E. Loader, W.M., 5.5 C.Y.		1049.00		1153.90	87.42	96.16
12 L.H., Daily Totals		\$1586.80		\$1973.30	\$132.23	\$164.44
Crew B-10V	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 700 H.P.		4485.00		4933.50	373.75	411.13
12 L.H., Daily Totals		\$5022.80		\$5752.90	\$418.57	\$479.41
Crew B-10W	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 105 H.P.		591.80		650.98	49.32	54.25
12 L.H., Daily Totals		\$1129.60		\$1470.38	\$94.13	\$122.53
Crew B-10X	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 410 H.P.		2409.00		2649.90	200.75	220.82
12 L.H., Daily Totals		\$2946.80		\$3469.30	\$245.57	\$289.11
Crew B-10Y	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 Vibr. Roller, Towed, 12 Ton		559.20		615.12	46.60	51.26
12 L.H., Daily Totals		\$1097.00		\$1434.52	\$91.42	\$119.54
Crew B-11A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equipment Oper. (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$42.77	\$65.35
1 Laborer	36.65	293.20	56.55	452.40		
1 Dozer, 200 H.P.		1325.00		1457.50	82.81	91.09
16 L.H., Daily Totals		\$2009.40		\$2503.10	\$125.59	\$156.44
Crew B-11B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equipment Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$41.85	\$63.95
1 Laborer	36.65	293.20	56.55	452.40		
1 Air Powered Tamper		26.20		28.82		
1 Air Compressor, 365 cfm		264.80		291.28		
2 -50' Air Hoses, 1.5"		11.60		12.76	18.91	20.80
16 L.H., Daily Totals		\$972.20		\$1356.06	\$60.76	\$84.75
Crew B-11C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equipment Oper. (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$42.77	\$65.35
1 Laborer	36.65	293.20	56.55	452.40		
1 Backhoe Loader, 48 H.P.		365.20		401.72	22.82	25.11
16 L.H., Daily Totals		\$1049.60		\$1447.32	\$65.60	\$90.46

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-11J						
1 Equipment Oper. (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$42.77	\$65.35
1 Laborer	36.65	293.20	56.55	452.40		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Ripper, Beam & 1 Shank		81.40		89.54	49.27	54.20
16 L.H., Daily Totals		\$1472.80		\$1912.84	\$92.05	\$119.55
Crew B-11K						
1 Equipment Oper. (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$42.77	\$65.35
1 Laborer	36.65	293.20	56.55	452.40		
1 Trencher, Chain Type, 8' D		3376.00		3713.60	211.00	232.10
16 L.H., Daily Totals		\$4060.40		\$4759.20	\$253.78	\$297.45
Crew B-11L						
1 Equipment Oper. (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$42.77	\$65.35
1 Laborer	36.65	293.20	56.55	452.40		
1 Grader, 30,000 Lbs.		707.00		777.70	44.19	48.61
16 L.H., Daily Totals		\$1391.40		\$1823.30	\$86.96	\$113.96
Crew B-11M						
1 Equipment Oper. (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$42.77	\$65.35
1 Laborer	36.65	293.20	56.55	452.40		
1 Backhoe Loader, 80 H.P.		397.60		437.36	24.85	27.34
16 L.H., Daily Totals		\$1082.00		\$1482.96	\$67.63	\$92.69
Crew B-11N						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.19	\$61.31
2 Equipment Operators (med.)	48.90	782.40	74.15	1186.40		
6 Truck Drivers (heavy)	37.55	1802.40	57.30	2750.40		
1 F.E. Loader, W.M., 5.5 C.Y.		1049.00		1153.90		
1 Dozer, 410 H.P.		2409.00		2649.90		
6 Dump Trucks, Off Hwy., 50 Ton		10722.00		11794.20	196.94	216.64
72 L.H., Daily Totals		\$17074.00		\$20012.00	\$237.14	\$277.94
Crew B-11Q						
1 Equipment Operator (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 140 H.P.		883.80		972.18	73.65	81.02
12 L.H., Daily Totals		\$1421.60		\$1791.58	\$118.47	\$149.30
Crew B-11R						
1 Equipment Operator (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 200 H.P.		1325.00		1457.50	110.42	121.46
12 L.H., Daily Totals		\$1862.80		\$2276.90	\$155.23	\$189.74
Crew B-11S						
1 Equipment Operator (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 300 H.P.		1817.00		1998.70		
1 Ripper, Beam & 1 Shank		81.40		89.54	158.20	174.02
12 L.H., Daily Totals		\$2436.20		\$2907.64	\$203.02	\$242.30
Crew B-11T						
1 Equipment Operator (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 410 H.P.		2409.00		2649.90		
1 Ripper, Beam & 2 Shanks		91.60		100.76	208.38	229.22
12 L.H., Daily Totals		\$3038.40		\$3570.06	\$253.20	\$297.51

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-11U						
1 Equipment Operator (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
5 Laborer	36.65	146.60	56.55	226.20		
1 Dozer, 520 H.P.		3116.00		3427.60	259.67	285.63
12 L.H., Daily Totals		\$3653.80		\$4247.00	\$304.48	\$353.92
Crew B-11V						
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$36.65	\$56.55
1 Roller, 2-Drum, W.B., 7.5 H.P.		182.80		201.08	7.62	8.38
24 L.H., Daily Totals		\$1062.40		\$1558.28	\$44.27	\$64.93
Crew B-11W						
1 Equipment Operator (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$38.42	\$58.64
1 Common Laborer	36.65	293.20	56.55	452.40		
10 Truck Drivers (heavy)	37.55	3004.00	57.30	4584.00		
1 Dozer, 200 H.P.		1325.00		1457.50		
1 Vibratory Roller, Towed, 23 Ton		412.00		453.20		
10 Dump Trucks, 8 C.Y., 220 H.P.		4172.00		4589.20	61.55	67.71
96 L.H., Daily Totals		\$9597.40		\$12129.50	\$99.97	\$126.35
Crew B-11Y						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.96	\$62.76
5 Common Laborers	36.65	1466.00	56.55	2262.00		
3 Equipment Operators (med.)	48.90	1173.60	74.15	1779.60		
1 Dozer, 80 H.P.		481.00		529.10		
2 Roller, 2-Drum, W.B., 7.5 H.P.		365.60		402.16		
4 Vibrating Plate, Gas, 21"		184.00		202.40	14.31	15.75
72 L.H., Daily Totals		\$3979.40		\$5652.46	\$55.27	\$78.51
Crew B-12A						
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Hyd. Excavator, 1 C.Y.		814.80		896.28	50.92	56.02
16 L.H., Daily Totals		\$1510.00		\$1958.28	\$94.38	\$122.39
Crew B-12B						
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Hyd. Excavator, 1.5 C.Y.		1031.00		1134.10	64.44	70.88
16 L.H., Daily Totals		\$1726.20		\$2196.10	\$107.89	\$137.26
Crew B-12C						
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Hyd. Excavator, 2 C.Y.		1175.00		1292.50	73.44	80.78
16 L.H., Daily Totals		\$1870.20		\$2354.50	\$116.89	\$147.16
Crew B-12D						
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Hyd. Excavator, 3.5 C.Y.		2442.00		2686.20	152.63	167.89
16 L.H., Daily Totals		\$3137.20		\$3748.20	\$196.07	\$234.26
Crew B-12E						
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Hyd. Excavator, .5 C.Y.		448.00		492.80	28.00	30.80
16 L.H., Daily Totals		\$1143.20		\$1554.80	\$71.45	\$97.17

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-12F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Hyd. Excavator, .75 C.Y.		662.00		728.20	41.38	45.51
16 L.H., Daily Totals		\$1357.20		\$1790.20	\$84.83	\$111.89
Crew B-12G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 15 Ton		684.15		752.57		
1 Clamshell Bucket, .5 C.Y.		37.80		41.58	45.12	49.63
16 L.H., Daily Totals		\$1417.15		\$1856.15	\$88.57	\$116.01
Crew B-12H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 25 Ton		1173.00		1290.30		
1 Clamshell Bucket, 1 C.Y.		47.40		52.14	76.28	83.90
16 L.H., Daily Totals		\$1915.60		\$2404.44	\$119.72	\$150.28
Crew B-12I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 20 Ton		880.25		968.27		
1 Dragline Bucket, .75 C.Y.		20.80		22.88	56.32	61.95
16 L.H., Daily Totals		\$1596.25		\$2053.16	\$99.77	\$128.32
Crew B-12J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Gradall, 5/8 C.Y.		881.60		969.76	55.10	60.61
16 L.H., Daily Totals		\$1576.80		\$2031.76	\$98.55	\$126.99
Crew B-12K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Gradall, 3 Ton, 1 C.Y.		1005.00		1105.50	62.81	69.09
16 L.H., Daily Totals		\$1700.20		\$2167.50	\$106.26	\$135.47
Crew B-12L	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 15 Ton		684.15		752.57		
1 F.E. Attachment, .5 C.Y.		59.60		65.56	46.48	51.13
16 L.H., Daily Totals		\$1438.95		\$1880.13	\$89.93	\$117.51
Crew B-12M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 20 Ton		880.25		968.27		
1 F.E. Attachment, .75 C.Y.		64.00		70.40	59.02	64.92
16 L.H., Daily Totals		\$1639.45		\$2100.68	\$102.47	\$131.29
Crew B-12N	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 25 Ton		1173.00		1290.30		
1 F.E. Attachment, 1 C.Y.		70.80		77.88	77.74	85.51
16 L.H., Daily Totals		\$1939.00		\$2430.18	\$121.19	\$151.89

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-120	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 40 Ton		1179.00		1296.90		
1 F.E. Attachment, 1.5 C.Y.		80.00		88.00	78.69	86.56
16 L.H., Daily Totals		\$1954.20		\$2446.90	\$122.14	\$152.93
Crew B-12P	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 40 Ton		1179.00		1296.90		
1 Dragline Bucket, 1.5 C.Y.		33.60		36.96	75.79	83.37
16 L.H., Daily Totals		\$1907.80		\$2395.86	\$119.24	\$149.74
Crew B-12N	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Hyd. Excavator, 5/8 C.Y.		594.40		653.84	37.15	40.87
16 L.H., Daily Totals		\$1289.60		\$1715.84	\$80.60	\$107.24
Crew B-12S	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Hyd. Excavator, 2.5 C.Y.		1637.00		1800.70	102.31	112.54
16 L.H., Daily Totals		\$2332.20		\$2862.70	\$145.76	\$178.92
Crew B-12T	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 75 Ton		1492.00		1641.20		
1 F.E. Attachment, 3 C.Y.		102.80		113.08	99.67	109.64
16 L.H., Daily Totals		\$2290.00		\$2816.28	\$143.13	\$176.02
Crew B-12V	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$43.45	\$66.38
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 75 Ton		1492.00		1641.20		
1 Dragline Bucket, 3 C.Y.		52.60		57.86	96.54	106.19
16 L.H., Daily Totals		\$2239.80		\$2761.06	\$139.99	\$172.57
Crew B-12Y	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$41.18	\$63.10
2 Laborers	36.65	586.40	56.55	904.80		
1 Hyd. Excavator, 3.5 C.Y.		2442.00		2686.20	101.75	111.93
24 L.H., Daily Totals		\$3430.40		\$4200.60	\$142.93	\$175.03
Crew B-12Z	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$41.18	\$63.10
2 Laborers	36.65	586.40	56.55	904.80		
1 Hyd. Excavator, 2.5 C.Y.		1637.00		1800.70	68.21	75.03
24 L.H., Daily Totals		\$2625.40		\$3315.10	\$109.39	\$138.13
Crew B-13	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.86	\$61.15
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 25 Ton		745.80		820.38	13.32	14.65
56 L.H., Daily Totals		\$2978.20		\$4244.78	\$53.18	\$75.80

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-13A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.69	\$62.24
2 Laborers	36.65	586.40	56.55	904.80		
2 Equipment Operators (med.)	48.90	782.40	74.15	1186.40		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Crawler Crane, 75 Ton		1492.00		1641.20		
1 Crawler Loader, 4 C.Y.		1532.00		1685.20		
2 Dump Trucks, 8 C.Y., 220 H.P.		834.40		917.84	68.90	75.79
56 L.H., Daily Totals		\$6137.20		\$7729.44	\$109.59	\$138.03
Crew B-13B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.86	\$61.15
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 55 Ton		1137.00		1250.70	20.30	22.33
56 L.H., Daily Totals		\$3369.40		\$4675.10	\$60.17	\$83.48
Crew B-13C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.86	\$61.15
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 100 Ton		1703.00		1873.30	30.41	33.45
56 L.H., Daily Totals		\$3935.40		\$5297.70	\$70.28	\$94.60
Crew B-13D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$43.45	\$66.38
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Excavator, 1 C.Y.		814.80		896.28		
1 Trench Box		84.05		92.45	56.18	61.80
16 L.H., Daily Totals		\$1594.05		\$2050.74	\$99.63	\$128.17
Crew B-13E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$43.45	\$66.38
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Excavator, 1.5 C.Y.		1031.00		1134.10		
1 Trench Box		84.05		92.45	69.69	76.66
16 L.H., Daily Totals		\$1810.25		\$2288.55	\$113.14	\$143.03
Crew B-13F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$43.45	\$66.38
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Excavator, 3.5 C.Y.		2442.00		2686.20		
1 Trench Box		84.05		92.45	157.88	173.67
16 L.H., Daily Totals		\$3221.25		\$3840.66	\$201.33	\$240.04
Crew B-13G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$43.45	\$66.38
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Excavator, .75 C.Y.		662.00		728.20		
1 Trench Box		84.05		92.45	46.63	51.29
16 L.H., Daily Totals		\$1441.25		\$1882.66	\$90.08	\$117.67
Crew B-13H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$43.45	\$66.38
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Gradall, 5/8 C.Y.		881.60		969.76		
1 Trench Box		84.05		92.45	60.35	66.39
16 L.H., Daily Totals		\$1660.85		\$2124.22	\$103.80	\$132.76

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-13I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$43.45	\$66.38
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Gradall, 3 Ton, 1 C.Y.		1005.00		1105.50		
1 Trench Box		84.05		92.45	68.07	74.87
16 L.H., Daily Totals		\$1784.25		\$2259.95	\$111.52	\$141.25
Crew B-13J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$43.45	\$66.38
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Excavator, 2.5 C.Y.		1637.00		1800.70		
1 Trench Box		84.05		92.45	107.57	118.32
16 L.H., Daily Totals		\$2416.25		\$2955.16	\$151.02	\$184.70
Crew B-14	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.72	\$59.53
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Backhoe Loader, 48 H.P.		365.20		401.72	7.61	8.37
48 L.H., Daily Totals		\$2223.60		\$3259.32	\$46.33	\$67.90
Crew B-14A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$45.72	\$69.65
.5 Laborer	36.65	146.60	56.55	226.20		
1 Hyd. Excavator, 4.5 C.Y.		3043.00		3347.30	253.58	278.94
12 L.H., Daily Totals		\$3591.60		\$4183.10	\$299.30	\$348.59
Crew B-14B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$45.72	\$69.65
.5 Laborer	36.65	146.60	56.55	226.20		
1 Hyd. Excavator, 6 C.Y.		3523.00		3875.30	293.58	322.94
12 L.H., Daily Totals		\$4071.60		\$4711.10	\$339.30	\$392.59
Crew B-14C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$45.72	\$69.65
.5 Laborer	36.65	146.60	56.55	226.20		
1 Hyd. Excavator, 7 C.Y.		3596.00		3955.60	299.67	329.63
12 L.H., Daily Totals		\$4144.60		\$4791.40	\$345.38	\$399.28
Crew B-14F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$45.72	\$69.65
.5 Laborer	36.65	146.60	56.55	226.20		
1 Hyd. Shovel, 7 C.Y.		3714.00		4085.40	309.50	340.45
12 L.H., Daily Totals		\$4262.60		\$4921.20	\$355.22	\$410.10
Crew B-14G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$50.25	\$402.00	\$76.20	\$609.60	\$45.72	\$69.65
.5 Laborer	36.65	146.60	56.55	226.20		
1 Hyd. Shovel, 12 C.Y.		5204.00		5724.40	433.67	477.03
12 L.H., Daily Totals		\$5752.60		\$6560.20	\$479.38	\$546.68
Crew B-14J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 F.E. Loader, 8 C.Y.		1989.00		2187.90	165.75	182.32
12 L.H., Daily Totals		\$2526.80		\$3007.30	\$210.57	\$250.61

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-14K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$44.82	\$68.28
.5 Laborer	36.65	146.60	56.55	226.20		
1 FE. Loader, 10 C.Y.		2703.00		2973.30	225.25	247.78
12 L.H., Daily Totals		\$3240.80		\$3792.70	\$270.07	\$316.06
Crew B-15	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equipment Oper. (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$40.66	\$62.01
.5 Laborer	36.65	146.60	56.55	226.20		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
2 Dump Trucks, 12 C.Y., 400 H.P.		1384.40		1522.84		
1 Dozer, 200 H.P.		1325.00		1457.50	96.76	106.44
28 L.H., Daily Totals		\$3848.00		\$4716.54	\$137.43	\$168.45
Crew B-16	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.38	\$57.51
2 Laborers	36.65	586.40	56.55	904.80		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Dump Truck, 12 C.Y., 400 H.P.		692.20		761.42	21.63	23.79
32 L.H., Daily Totals		\$1888.20		\$2601.82	\$59.01	\$81.31
Crew B-17	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$39.48	\$60.44
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Backhoe Loader, 48 H.P.		365.20		401.72		
1 Dump Truck, 8 C.Y., 220 H.P.		417.20		458.92	24.45	26.90
32 L.H., Daily Totals		\$2045.60		\$2794.64	\$63.92	\$87.33
Crew B-17A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Labor Foremen (outside)	\$38.65	\$618.40	\$59.65	\$954.40	\$39.38	\$60.82
6 Laborers	36.65	1759.20	56.55	2714.40		
1 Skilled Worker Foreman (out)	49.30	394.40	76.35	610.80		
1 Skilled Worker	47.30	378.40	73.25	586.00		
80 L.H., Daily Totals		\$3150.40		\$4865.60	\$39.38	\$60.82
Crew B-17B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$39.48	\$60.44
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Backhoe Loader, 48 H.P.		365.20		401.72		
1 Dump Truck, 12 C.Y., 400 H.P.		692.20		761.42	33.04	36.35
32 L.H., Daily Totals		\$2320.60		\$3097.14	\$72.52	\$96.79
Crew B-16	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.32	\$57.58
2 Laborers	36.65	586.40	56.55	904.80		
1 Vibrating Plate, Gas, 21"		46.00		50.60	1.92	2.11
24 L.H., Daily Totals		\$941.60		\$1432.60	\$39.23	\$59.69
Crew B-16	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pile Driver Foreman (outside)	\$46.40	\$371.20	\$73.60	\$588.80	\$46.01	\$71.70
4 Pile Drivers	44.40	1420.80	70.40	2252.80		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 40 Ton		1179.00		1296.90		
1 Lead, 90' High		124.40		136.84		
1 Hammer, Diesel, 22k ft-lb		537.45		591.20		
64 L.H., Daily Totals		\$4785.25		\$6613.73	\$74.77	\$103.34

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-19A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pile Driver Foreman (outside)	\$46.40	\$371.20	\$73.60	\$588.80	\$46.01	\$71.70
4 Pile Drivers	44.40	1420.80	70.40	2252.80		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 75 Ton		1492.00		1641.20		
1 Lead, 90' high		124.40		136.84		
1 Hammer, Diesel, 41k ft-lb		642.40		706.64	35.29	38.82
64 L.H., Daily Totals		\$5203.20		\$7073.48	\$81.30	\$110.52
Crew B-19B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pile Driver Foreman (outside)	\$46.40	\$371.20	\$73.60	\$588.80	\$46.01	\$71.70
4 Pile Drivers	44.40	1420.80	70.40	2252.80		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 40 Ton		1179.00		1296.90		
1 Lead, 90' High		124.40		136.84		
1 Hammer, Diesel, 22k ft-lb		537.45		591.20		
1 Barge, 400 Ton		781.00		859.10	40.97	45.06
64 L.H., Daily Totals		\$5566.25		\$7472.84	\$86.97	\$116.76
Crew B-19C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pile Driver Foreman (outside)	\$46.40	\$371.20	\$73.60	\$588.80	\$46.01	\$71.70
4 Pile Drivers	44.40	1420.80	70.40	2252.80		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 75 Ton		1492.00		1641.20		
1 Lead, 90' High		124.40		136.84		
1 Hammer, Diesel, 41k ft-lb		642.40		706.64		
1 Barge, 400 Ton		781.00		859.10	47.50	52.25
64 L.H., Daily Totals		\$5984.20		\$7932.58	\$93.50	\$123.95
Crew B-20	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.87	\$63.15
1 Skilled Worker	47.30	378.40	73.25	586.00		
1 Laborer	36.65	293.20	56.55	452.40		
24 L.H., Daily Totals		\$980.80		\$1515.60	\$40.87	\$63.15
Crew B-20A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$44.73	\$68.16
1 Laborer	36.65	293.20	56.55	452.40		
1 Plumber	57.55	460.40	86.90	695.20		
1 Plumber Apprentice	46.05	368.40	69.55	556.40		
32 L.H., Daily Totals		\$1431.20		\$2181.20	\$44.73	\$68.16
Crew B-21	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$42.21	\$65.01
1 Skilled Worker	47.30	378.40	73.25	586.00		
1 Laborer	36.65	293.20	56.55	452.40		
.5 Equip. Oper. (crane)	50.25	201.00	76.20	304.80		
.5 S.P. Crane, 4x4, 5 Ton		140.00		154.00	5.00	5.50
28 L.H., Daily Totals		\$1321.80		\$1974.40	\$47.21	\$70.51
Crew B-21A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$45.83	\$69.77
1 Laborer	36.65	293.20	56.55	452.40		
1 Plumber	57.55	460.40	86.90	695.20		
1 Plumber Apprentice	46.05	368.40	69.55	556.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 S.P. Crane, 4x4, 12 Ton		481.20		529.32	12.03	13.23
40 L.H., Daily Totals		\$2314.40		\$3320.12	\$57.86	\$83.00

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-21B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.77	\$61.10
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Crane, 12 Ton		663.00		729.30	16.57	18.23
40 L.H., Daily Totals		\$2253.80		\$3173.30	\$56.34	\$79.33
Crew B-21C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.86	\$61.15
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
2 Cutting Torches		22.80		25.08		
2 Sets of Gases		304.00		334.40		
1 Lattice Boom Crane, 90 Ton		1529.00		1681.90	33.14	36.45
56 L.H., Daily Totals		\$4088.20		\$5465.78	\$73.00	\$97.60
Crew B-22	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$42.74	\$65.76
1 Skilled Worker	47.30	378.40	73.25	586.00		
1 Laborer	36.65	293.20	56.55	452.40		
.75 Equip. Oper. (crane)	50.25	301.50	76.20	457.20		
.75 S.P. Crane, 4x4, 5 Ton		210.00		231.00	7.00	7.70
30 L.H., Daily Totals		\$1492.30		\$2203.80	\$49.74	\$73.46
Crew B-22A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.90	\$64.44
1 Skilled Worker	47.30	378.40	73.25	586.00		
2 Laborers	36.65	586.40	56.55	904.80		
1 Equipment Operator, Crane	50.25	402.00	76.20	609.60		
1 S.P. Crane, 4x4, 5 Ton		280.00		308.00		
1 Butt Fusion Mach., 4"-12" diam.		381.80		419.98	16.55	18.20
40 L.H., Daily Totals		\$2337.80		\$3305.58	\$58.45	\$82.64
Crew B-22B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.90	\$64.44
1 Skilled Worker	47.30	378.40	73.25	586.00		
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 S.P. Crane, 4x4, 5 Ton		280.00		308.00		
1 Butt Fusion Mach., 8"-24" diam.		828.40		911.24	27.71	30.48
40 L.H., Daily Totals		\$2784.40		\$3796.84	\$69.61	\$94.92
Crew B-22C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Skilled Worker	\$47.30	\$378.40	\$73.25	\$586.00	\$41.98	\$64.90
1 Laborer	36.65	293.20	56.55	452.40		
1 Butt Fusion Mach., 2"-8" diam.		120.95		133.04	7.56	8.32
16 L.H., Daily Totals		\$792.55		\$1171.44	\$49.53	\$73.22
Crew B-23	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.05	\$57.17
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Drill Rig, Truck-Mounted		2551.00		2806.10		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	72.10	79.31
40 L.H., Daily Totals		\$4366.00		\$5459.20	\$109.15	\$136.48

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-23A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.40	\$63.45
1 Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Drill Rig, Truck-Mounted		2551.00		2806.10		
1 Pickup Truck, 3/4 Ton		157.00		172.70	112.83	124.12
24 L.H., Daily Totals		\$3701.60		\$4501.60	\$154.23	\$187.57
Crew B-23B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.40	\$63.45
1 Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Drill Rig, Truck-Mounted		2551.00		2806.10		
1 Pickup Truck, 3/4 Ton		157.00		172.70		
1 Centr. Water Pump, 6"		340.80		374.88	127.03	139.74
24 L.H., Daily Totals		\$4042.40		\$4876.48	\$168.43	\$203.19
Crew B-24	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Cement Finisher	\$44.05	\$352.40	\$65.10	\$520.80	\$42.18	\$64.13
1 Laborer	36.65	293.20	56.55	452.40		
1 Carpenter	45.85	366.80	70.75	566.00		
24 L.H., Daily Totals		\$1012.40		\$1539.20	\$42.18	\$64.13
Crew B-25	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.17	\$61.63
7 Laborers	36.65	2052.40	56.55	3166.80		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Asphalt Paver, 130 H.P.		2169.00		2385.90		
1 Tandem Roller, 10 Ton		242.00		266.20		
1 Roller, Pneum. Whl., 12 Ton		349.00		383.90	31.36	34.50
88 L.H., Daily Totals		\$6295.20		\$8459.60	\$71.54	\$96.13
Crew B-25B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.90	\$62.67
7 Laborers	36.65	2052.40	56.55	3166.80		
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
1 Asphalt Paver, 130 H.P.		2169.00		2385.90		
2 Tandem Rollers, 10 Ton		484.00		532.40		
1 Roller, Pneum. Whl., 12 Ton		349.00		383.90	31.27	34.40
96 L.H., Daily Totals		\$6928.40		\$9319.00	\$72.17	\$97.07
Crew B-25C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.07	\$62.93
3 Laborers	36.65	879.60	56.55	1357.20		
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Asphalt Paver, 130 H.P.		2169.00		2385.90		
1 Tandem Roller, 10 Ton		242.00		266.20	50.23	55.25
48 L.H., Daily Totals		\$4382.20		\$5672.90	\$91.30	\$118.19
Crew B-25D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.15	\$63.05
3 Laborers	36.65	879.60	56.55	1357.20		
2.125 Equip. Oper. (medium)	48.90	831.30	74.15	1260.55		
.125 Truck Driver (heavy)	37.55	37.55	57.30	57.30		
.125 Truck Tractor, 6x4, 380 H.P.		76.60		84.26		
.125 Dist. Tanker, 3000 Gallon		38.52		42.38		
1 Asphalt Paver, 130 H.P.		2169.00		2385.90		
1 Tandem Roller, 10 Ton		242.00		266.20	50.52	55.57
50 L.H., Daily Totals		\$4583.77		\$5930.99	\$91.68	\$118.62

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-25E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.23	\$63.15
3 Laborers	36.65	879.60	56.55	1357.20		
2.250 Equip. Oper. (medium)	48.90	880.20	74.15	1334.70		
.25 Truck Driver (heavy)	37.55	75.10	57.30	114.60		
.25 Truck Tractor, 6x4, 380 H.P.		153.20		168.52		
.25 Dist. Tanker, 3000 Gallon		77.05		84.75		
1 Asphalt Paver, 130 H.P.		2169.00		2385.90		
1 Tandem Roller, 10 Ton		242.00		266.20	50.79	55.87
52 L.H., Daily Totals		\$4785.35		\$6189.07	\$92.03	\$119.02
Crew B-26	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.00	\$62.90
6 Laborers	36.65	1759.20	56.55	2714.40		
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Rodman (reinf.)	50.65	405.20	79.55	636.40		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Paving Mach. & Equip.		2657.00		2922.70	38.23	42.05
88 L.H., Daily Totals		\$6972.40		\$9235.60	\$79.23	\$104.95
Crew B-26A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.00	\$62.90
6 Laborers	36.65	1759.20	56.55	2714.40		
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Rodman (reinf.)	50.65	405.20	79.55	636.40		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Paving Mach. & Equip.		2657.00		2922.70		
1 Concrete Saw		175.20		192.72	40.22	44.24
88 L.H., Daily Totals		\$7147.60		\$9428.32	\$81.22	\$107.14
Crew B-26B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.66	\$63.84
6 Laborers	36.65	1759.20	56.55	2714.40		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Rodman (reinf.)	50.65	405.20	79.55	636.40		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Paving Mach. & Equip.		2657.00		2922.70		
1 Concrete Pump, 110' Boom		934.00		1027.40	44.77	49.25
96 L.H., Daily Totals		\$8297.60		\$10856.20	\$86.43	\$113.09
Crew B-26C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.22	\$61.77
6 Laborers	36.65	1759.20	56.55	2714.40		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Rodman (reinf.)	50.65	405.20	79.55	636.40		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Paving Mach. & Equip.		2657.00		2922.70		
1 Concrete Saw		175.20		192.72	35.40	38.94
80 L.H., Daily Totals		\$6049.40		\$8057.42	\$75.62	\$100.72
Crew B-27	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.15	\$57.33
3 Laborers	36.65	879.60	56.55	1357.20		
1 Berm Machine		294.40		323.84	9.20	10.12
32 L.H., Daily Totals		\$1483.20		\$2158.24	\$46.35	\$67.44

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-28	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Carpenters	\$45.85	\$733.60	\$70.75	\$1132.00	\$42.78	\$66.02
1 Laborer	36.65	293.20	56.55	452.40		
24 L.H., Daily Totals		\$1026.80		\$1584.40	\$42.78	\$66.02
Crew B-29	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.86	\$61.15
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (offler)	43.55	348.40	66.00	528.00		
1 Gradall, 5/8 C.Y.		881.60		969.76	15.74	17.32
56 L.H., Daily Totals		\$3114.00		\$4394.16	\$55.61	\$78.47
Crew B-30	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$41.33	\$62.92
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Hyd. Excavator, 1.5 C.Y.		1031.00		1134.10		
2 Dump Trucks, 12 C.Y., 400 H.P.		1384.40		1522.84	100.64	110.71
24 L.H., Daily Totals		\$3407.40		\$4166.94	\$141.97	\$173.62
Crew B-31	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.89	\$60.01
3 Laborers	36.65	879.60	56.55	1357.20		
1 Carpenter	45.85	366.80	70.75	566.00		
1 Air Compressor, 250 cfm		202.40		222.64		
1 Sheeting Driver		5.30		5.83		
2-50' Air Hoses, 1.5"		11.60		12.76	5.48	6.03
40 L.H., Daily Totals		\$1774.90		\$2641.63	\$44.37	\$66.04
Crew B-32	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$45.84	\$69.75
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Tandem Roller, 10 Ton		242.00		266.20		
1 Dozer, 200 H.P.		1325.00		1457.50	71.06	78.17
32 L.H., Daily Totals		\$3740.80		\$4733.40	\$116.90	\$147.92
Crew B-32A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$44.82	\$68.28
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Roller, Vibratory, 25 Ton		692.80		762.08	58.33	64.16
24 L.H., Daily Totals		\$2475.40		\$3178.58	\$103.14	\$132.44
Crew B-32B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$44.82	\$68.28
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Dozer, 200 H.P.		1325.00		1457.50		
1 Roller, Vibratory, 25 Ton		692.80		762.08	84.08	92.48
24 L.H., Daily Totals		\$3093.40		\$3858.38	\$128.89	\$160.77
Crew B-32C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$43.11	\$65.87
2 Laborers	36.65	586.40	56.55	904.80		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Tandem Roller, 10 Ton		242.00		266.20		
1 Dozer, 200 H.P.		1325.00		1457.50	47.38	52.11
48 L.H., Daily Totals		\$4343.20		\$5663.00	\$90.48	\$117.98

Crews

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-33A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$45.40	\$69.12
.5 Laborer	36.65	146.60	56.55	226.20		
.25 Equip. Oper. (medium)	48.90	97.80	74.15	148.30		
1 Scraper, Towed, 7 C.Y.		111.60		122.76		
1.25 Dozers, 300 H.P.		2271.25		2498.38	170.20	187.22
14 L.H., Daily Totals		\$3018.45		\$3588.84	\$215.60	\$256.35
Crew B-33B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$45.40	\$69.12
.5 Laborer	36.65	146.60	56.55	226.20		
.25 Equip. Oper. (medium)	48.90	97.80	74.15	148.30		
1 Scraper, Towed, 10 C.Y.		141.60		155.76		
1.25 Dozers, 300 H.P.		2271.25		2498.38	172.35	189.58
14 L.H., Daily Totals		\$3048.45		\$3621.84	\$217.75	\$258.70
Crew B-33C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$45.40	\$69.12
.5 Laborer	36.65	146.60	56.55	226.20		
.25 Equip. Oper. (medium)	48.90	97.80	74.15	148.30		
1 Scraper, Towed, 15 C.Y.		158.80		174.68		
1.25 Dozers, 300 H.P.		2271.25		2498.38	173.57	190.93
14 L.H., Daily Totals		\$3065.65		\$3640.76	\$218.97	\$260.05
Crew B-33D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$45.40	\$69.12
.5 Laborer	36.65	146.60	56.55	226.20		
.25 Equip. Oper. (medium)	48.90	97.80	74.15	148.30		
1 S.P. Scraper, 14 C.Y.		1829.00		2011.90		
.25 Dozer, 300 H.P.		454.25		499.68	163.09	179.40
14 L.H., Daily Totals		\$2918.85		\$3479.28	\$208.49	\$248.52
Crew B-33E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$45.40	\$69.12
.5 Laborer	36.65	146.60	56.55	226.20		
.25 Equip. Oper. (medium)	48.90	97.80	74.15	148.30		
1 S.P. Scraper, 21 C.Y.		2599.00		2858.90		
.25 Dozer, 300 H.P.		454.25		499.68	218.09	239.90
14 L.H., Daily Totals		\$3688.85		\$4326.27	\$263.49	\$309.02
Crew B-33F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$45.40	\$69.12
.5 Laborer	36.65	146.60	56.55	226.20		
.25 Equip. Oper. (medium)	48.90	97.80	74.15	148.30		
1 Elev. Scraper, 11 C.Y.		1180.00		1298.00		
.25 Dozer, 300 H.P.		454.25		499.68	116.73	128.41
14 L.H., Daily Totals		\$2269.85		\$2765.38	\$162.13	\$197.53
Crew B-33G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$45.40	\$69.12
.5 Laborer	36.65	146.60	56.55	226.20		
.25 Equip. Oper. (medium)	48.90	97.80	74.15	148.30		
1 Elev. Scraper, 22 C.Y.		2443.00		2687.30		
.25 Dozer, 300 H.P.		454.25		499.68	206.95	227.64
14 L.H., Daily Totals		\$3532.85		\$4154.68	\$252.35	\$296.76

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-33H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
.5 Laborer	\$36.65	\$146.60	\$56.55	\$226.20	\$45.40	\$69.12
1 Equipment Operator (med.)	48.90	391.20	74.15	593.20		
.25 Equipment Operator (med.)	48.90	97.80	74.15	148.30		
1 S.P. Scraper, 44 C.Y.		4492.00		4941.20		
.25 Dozer, 410 H.P.		602.25		662.48	363.88	400.26
14 L.H., Daily Totals		\$5729.85		\$6571.38	\$409.27	\$469.38
Crew B-33J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equipment Operator (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$48.90	\$74.15
1 S.P. Scraper, 14 C.Y.		1829.00		2011.90	228.63	251.49
8 L.H., Daily Totals		\$2220.20		\$2605.10	\$277.52	\$325.64
Crew B-33K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equipment Operator (med.)	\$48.90	\$391.20	\$74.15	\$593.20	\$45.40	\$69.12
.25 Equipment Operator (med.)	48.90	97.80	74.15	148.30		
.5 Laborer	36.65	146.60	56.55	226.20		
1 S.P. Scraper, 31 C.Y.		3566.00		3922.60		
.25 Dozer, 410 H.P.		602.25		662.48	297.73	327.51
14 L.H., Daily Totals		\$4803.85		\$5552.77	\$343.13	\$396.63
Crew B-34B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, 8 C.Y., 220 H.P.		417.20		458.92	52.15	57.37
8 L.H., Daily Totals		\$717.60		\$917.32	\$89.70	\$114.67
Crew B-34B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, 12 C.Y., 400 H.P.		692.20		761.42	86.53	95.18
8 L.H., Daily Totals		\$992.60		\$1219.82	\$124.08	\$152.48
Crew B-34C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Truck Tractor, 6x4, 380 H.P.		612.80		674.08		
1 Dump Trailer, 16.5 C.Y.		126.20		138.82	92.38	101.61
8 L.H., Daily Totals		\$1039.40		\$1271.30	\$129.93	\$158.91
Crew B-34D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Truck Tractor, 6x4, 380 H.P.		612.80		674.08		
1 Dump Trailer, 20 C.Y.		140.80		154.88	94.20	103.62
8 L.H., Daily Totals		\$1054.00		\$1287.36	\$131.75	\$160.92
Crew B-34E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, Off Hwy., 25 Ton		1314.00		1445.40	164.25	180.68
8 L.H., Daily Totals		\$1614.40		\$1903.80	\$201.80	\$237.97
Crew B-34F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, Off Hwy., 35 Ton		1470.00		1617.00	183.75	202.13
8 L.H., Daily Totals		\$1770.40		\$2075.40	\$221.30	\$259.43
Crew B-34G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, Off Hwy., 50 Ton		1787.00		1965.70	223.38	245.71
8 L.H., Daily Totals		\$2087.40		\$2424.10	\$260.93	\$303.01

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-34H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, Off Hwy., 65 Ton		1797.00		1976.70	224.63	247.09
8 L.H., Daily Totals		\$2097.40		\$2435.10	\$262.18	\$304.39
Crew B-34I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, 18 C.Y., 450 H.P.		867.60		954.36	108.45	119.30
8 L.H., Daily Totals		\$1168.00		\$1412.76	\$146.00	\$176.60
Crew B-34J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, Off Hwy., 100 Ton		2898.00		3187.80	362.25	398.48
8 L.H., Daily Totals		\$3198.40		\$3646.20	\$399.80	\$455.77
Crew B-34K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Truck Tractor, 6x4, 450 H.P.		742.40		816.64		
1 Lowbed Trailer, 75 Ton		219.80		241.78	120.28	132.30
8 L.H., Daily Totals		\$1262.60		\$1516.82	\$157.82	\$189.60
Crew B-34L	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22	33.77	37.15
8 L.H., Daily Totals		\$646.60		\$868.02	\$80.83	\$108.50
Crew B-34M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	41.63	45.79
8 L.H., Daily Totals		\$709.40		\$937.10	\$88.67	\$117.14
Crew B-34N	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Dump Truck, 8 C.Y., 220 H.P.		417.20		458.92		
1 Flatbed Trailer, 40 Ton		152.00		167.20	71.15	78.27
8 L.H., Daily Totals		\$869.60		\$1084.52	\$108.70	\$135.57
Crew B-34P	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pipe Fitter	\$58.50	\$468.00	\$88.35	\$706.80	\$47.97	\$72.73
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Backhoe Loader, 48 H.P.		365.20		401.72	29.09	32.00
24 L.H., Daily Totals		\$1849.40		\$2513.62	\$77.06	\$104.73
Crew B-34Q	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pipe Fitter	\$58.50	\$468.00	\$88.35	\$706.80	\$48.42	\$73.42
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Flatbed Trailer, 25 Ton		113.60		124.96		
1 Dump Truck, 8 C.Y., 220 H.P.		417.20		458.92		
1 Hyd. Crane, 25 Ton		745.80		820.38	53.19	58.51
24 L.H., Daily Totals		\$2438.60		\$3166.26	\$101.61	\$131.93

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-34R	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pipe Fitter	\$58.50	\$468.00	\$88.35	\$706.80	\$48.42	\$73.42
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Flatbed Trailer, 25 Ton		113.60		124.96		
1 Dump Truck, 8 C.Y., 220 H.P.		417.20		458.92		
1 Hyd. Crane, 25 Ton		745.80		820.38		
1 Hyd. Excavator, 1 C.Y.		814.80		896.28	87.14	95.86
24 L.H., Daily Totals		\$3253.40		\$4062.54	\$135.56	\$169.27
Crew B-34S	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Pipe Fitters	\$58.50	\$936.00	\$88.35	\$1413.60	\$51.20	\$77.55
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Flatbed Trailer, 40 Ton		152.00		167.20		
1 Truck Tractor, 6x4, 380 H.P.		612.80		674.08		
1 Hyd. Crane, 80 Ton		1652.00		1817.20		
1 Hyd. Excavator, 2 C.Y.		1175.00		1292.50	112.24	123.47
32 L.H., Daily Totals		\$5230.20		\$6432.58	\$163.44	\$201.02
Crew B-34T	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Pipe Fitters	\$58.50	\$936.00	\$88.35	\$1413.60	\$51.20	\$77.55
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Flatbed Trailer, 40 Ton		152.00		167.20		
1 Truck Tractor, 6x4, 380 H.P.		612.80		674.08		
1 Hyd. Crane, 80 Ton		1652.00		1817.20	75.53	83.08
32 L.H., Daily Totals		\$4055.20		\$5140.08	\$126.72	\$160.63
Crew B-35	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$45.66	\$69.76
1 Skilled Worker	47.30	378.40	73.25	586.00		
1 Welder (plumber)	57.55	460.40	86.90	695.20		
1 Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Welder, Electric, 300 amp		55.30		60.83		
1 Hyd. Excavator, .75 C.Y.		662.00		728.20	14.94	16.44
48 L.H., Daily Totals		\$2908.90		\$4137.43	\$60.60	\$86.20
Crew B-35A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$44.37	\$67.87
2 Laborers	36.65	586.40	56.55	904.80		
1 Skilled Worker	47.30	378.40	73.25	586.00		
1 Welder (plumber)	57.55	460.40	86.90	695.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Welder, Gas Engine, 300 amp		142.00		156.20		
1 Crawler Crane, 75 Ton		1492.00		1641.20	29.18	32.10
56 L.H., Daily Totals		\$4118.80		\$5598.20	\$73.55	\$99.97
Crew B-36	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.95	\$64.21
2 Laborers	36.65	586.40	56.55	904.80		
2 Equip. Oper. (medium)	48.90	782.40	74.15	1186.40		
1 Dozer, 200 H.P.		1325.00		1457.50		
1 Aggregate Spreader		41.20		45.32		
1 Tandem Roller, 10 Ton		242.00		266.20	40.20	44.23
40 L.H., Daily Totals		\$3286.20		\$4337.42	\$82.16	\$108.44

Crews

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-36A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$43.94	\$67.05
2 Laborers	36.65	586.40	56.55	904.80		
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
1 Dozer, 200 H.P.		1325.00		1457.50		
1 Aggregate Spreader		41.20		45.32		
1 Tandem Roller, 10 Ton		242.00		266.20		
1 Roller, Pneum. Whl., 12 Ton		349.00		383.90	34.95	38.45
56 L.H., Daily Totals		\$4417.60		\$5907.72	\$78.89	\$105.50
Crew B-36B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$43.14	\$65.83
2 Laborers	36.65	586.40	56.55	904.80		
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 F.E. Loader, Crl, 1.5 C.Y.		625.20		687.72		
1 Dozer, 300 H.P.		1817.00		1998.70		
1 Roller, Vibratory, 25 Ton		692.80		762.08		
1 Truck Tractor, 6x4, 450 H.P.		742.40		816.64		
1 Water Tank Trailer, 5000 Gal.		141.60		155.76	73.84	81.23
64 L.H., Daily Totals		\$7486.80		\$9411.80	\$116.98	\$147.06
Crew B-36C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$44.58	\$67.88
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Dozer, 300 H.P.		1817.00		1998.70		
1 Roller, Vibratory, 25 Ton		692.80		762.08		
1 Truck Tractor, 6x4, 450 H.P.		742.40		816.64		
1 Water Tank Trailer, 5000 Gal.		141.60		155.76	102.52	112.77
40 L.H., Daily Totals		\$5884.00		\$7226.08	\$147.10	\$180.65
Crew B-36D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$46.34	\$70.53
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Dozer, 300 H.P.		1817.00		1998.70		
1 Roller, Vibratory, 25 Ton		692.80		762.08	100.53	110.58
32 L.H., Daily Totals		\$4699.60		\$5795.28	\$146.86	\$181.10
Crew B-37	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.72	\$59.53
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Tandem Roller, 5 Ton		159.00		174.90	3.31	3.64
48 L.H., Daily Totals		\$2017.40		\$3032.50	\$42.03	\$63.18
Crew B-37A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.60	\$56.27
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22		
1 Tar Kettle, T.M.		104.60		115.06	15.62	17.18
24 L.H., Daily Totals		\$1253.20		\$1762.68	\$52.22	\$73.44
Crew B-37B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$36.61	\$56.34
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22		
1 Tar Kettle, T.M.		104.60		115.06	11.71	12.88
32 L.H., Daily Totals		\$1546.40		\$2215.08	\$48.33	\$69.22

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-37C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.58	\$56.13
2 Truck Drivers (light)	36.50	584.00	55.70	891.20		
2 Flatbed Trucks, Gas, 1.5 Ton		540.40		594.44		
1 Tar Kettle, T.M.		104.60		115.06	20.16	22.17
32 L.H., Daily Totals		\$1815.40		\$2505.50	\$56.73	\$78.30
Crew B-37D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.58	\$56.13
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Pickup Truck, 3/4 Ton		157.00		172.70	9.81	10.79
16 L.H., Daily Totals		\$742.20		\$1070.70	\$46.39	\$66.92
Crew B-37E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$39.84	\$60.94
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
2 Truck Drivers (light)	36.50	584.00	55.70	891.20		
4 Barrels w/ Flasher		13.60		14.96		
1 Concrete Saw		175.20		192.72		
1 Rotary Hammer Drill		24.00		26.40		
1 Hammer Drill Bit		2.35		2.59		
1 Loader, Skid Steer, 30 H.P.		174.20		191.62		
1 Conc. Hammer Attach.		114.70		126.17		
1 Vibrating Plate, Gas, 18"		35.80		39.38		
2 Flatbed Trucks, Gas, 1.5 Ton		540.40		594.44	19.29	21.22
56 L.H., Daily Totals		\$3311.45		\$4600.68	\$59.13	\$82.15
Crew B-37F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$36.61	\$56.34
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
4 Barrels w/ Flasher		13.60		14.96		
1 Concrete Mixer, 10 C.F.		176.80		194.48		
1 Air Compressor, 60 cfm		137.40		151.14		
1 -50' Air Hose, 3/4"		3.25		3.58		
1 Spade (Chipper)		7.80		8.58		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22	19.03	20.94
32 L.H., Daily Totals		\$1780.65		\$2472.76	\$55.65	\$77.27
Crew B-37G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.72	\$59.53
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Berm Machine		294.40		323.84		
1 Tandem Roller, 5 Ton		159.00		174.90	9.45	10.39
48 L.H., Daily Totals		\$2311.80		\$3356.34	\$48.16	\$69.92
Crew B-37H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.72	\$59.53
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Tandem Roller, 5 Ton		159.00		174.90		
1 Flatbed Trucks, Gas, 1.5 Ton		270.20		297.22		
1 Tar Kettle, T.M.		104.60		115.06	11.12	12.23
48 L.H., Daily Totals		\$2392.20		\$3444.78	\$49.84	\$71.77

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-37I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$39.84	\$60.94
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
2 Truck Drivers (light)	36.50	584.00	55.70	891.20		
4 Barrels w/ Flasher		13.60		14.96		
1 Concrete Saw		175.20		192.72		
1 Rotary Hammer Drill		24.00		26.40		
1 Hammer Drill Bit		2.35		2.59		
1 Air Compressor, 60 cfm		137.40		151.14		
1 -50' Air Hose, 3/4"		3.25		3.58		
1 Spade (Chipper)		7.80		8.58		
1 Loader, Skid Steer, 30 H.P.		174.20		191.62		
1 Conc. Hammer Attach.		114.70		126.17		
1 Concrete Mixer, 10 C.F.		176.80		194.48		
1 Vibrating Plate, Gas, 18"		35.80		39.38		
2 Flatbed Trucks, Gas, 1.5 Ton		540.40		594.44	25.10	27.61
56 L.H., Daily Totals		\$3636.70		\$4958.45	\$64.94	\$88.54
Crew B-37J	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.72	\$59.53
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Compressor, 60 cfm		137.40		151.14		
1 -50' Air Hose, 3/4"		3.25		3.58		
2 Concrete Mixer, 10 C.F.		353.60		388.96		
2 Flatbed Trucks, Gas, 1.5 Ton		540.40		594.44		
1 Shot Blaster, 20"		214.40		235.84	26.02	28.62
48 L.H., Daily Totals		\$3107.45		\$4231.56	\$64.74	\$88.16
Crew B-37K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.72	\$59.53
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Compressor, 60 cfm		137.40		151.14		
1 -50' Air Hose, 3/4"		3.25		3.58		
2 Flatbed Trucks, Gas, 1.5 Ton		540.40		594.44		
1 Shot Blaster, 20"		214.40		235.84	18.66	20.52
48 L.H., Daily Totals		\$2753.85		\$3842.59	\$57.37	\$80.05
Crew B-38	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.58	\$63.65
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Backhoe Loader, 48 H.P.		365.20		401.72		
1 Hyd. Hammer, (1200 lb.)		180.40		198.44		
1 F.E. Loader, W.M., 4 C.Y.		673.80		741.18		
1 Pvm. Rem. Bucket		60.80		66.88	32.01	35.21
40 L.H., Daily Totals		\$2943.40		\$3954.22	\$73.58	\$98.86
Crew B-39	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.72	\$59.53
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Compressor 250 cfm		202.40		222.64		
2 Breakers, Pavement, 60 lb.		19.60		21.56		
2 -50' Air Hoses, 1.5"		11.60		12.76	4.87	5.35
48 L.H., Daily Totals		\$2092.00		\$3114.56	\$43.58	\$64.89

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-40	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pile Driver Foreman (outside)	\$46.40	\$371.20	\$73.60	\$588.80	\$46.01	\$71.70
4 Pile Drivers	44.40	1420.80	70.40	2252.80		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 40 Ton		1179.00		1296.90		
1 Vibratory Hammer & Gen.		2640.00		2904.00	59.67	65.64
64 L.H., Daily Totals		\$6763.40		\$8789.70	\$105.68	\$137.34
Crew B-40B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.40	\$61.92
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Lattice Boom Crane, 40 Ton		1177.00		1294.70	24.52	26.97
48 L.H., Daily Totals		\$3116.20		\$4266.70	\$64.92	\$88.89
Crew B-41	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.95	\$58.44
4 Laborers	36.65	1172.80	56.55	1809.60		
.25 Equip. Oper. (crane)	50.25	100.50	76.20	152.40		
.25 Equip. Oper. (oiler)	43.55	87.10	66.00	132.00		
.25 Crawler Crane, 40 Ton		294.75		324.23	6.70	7.37
44 L.H., Daily Totals		\$1964.35		\$2895.43	\$44.64	\$65.81
Crew B-42	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.27	\$64.78
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Welder	51.10	408.80	90.20	721.60		
1 Hyd. Crane, 25 Ton		745.80		820.38		
1 Welder, Gas Engine, 300 amp		142.00		156.20		
1 Horz. Boring Csg. Mch.		479.80		527.78	21.37	23.51
64 L.H., Daily Totals		\$4008.80		\$5650.36	\$62.64	\$88.29
Crew B-43	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.40	\$61.92
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Drill Rig, Truck-Mounted		2551.00		2806.10	53.15	58.46
48 L.H., Daily Totals		\$4490.20		\$5778.10	\$93.55	\$120.38
Crew B-44	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Pile Driver Foreman (outside)	\$46.40	\$371.20	\$73.60	\$588.80	\$45.14	\$70.52
4 Pile Drivers	44.40	1420.80	70.40	2252.80		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
1 Laborer	36.65	293.20	56.55	452.40		
1 Crawler Crane, 40 Ton		1179.00		1296.90		
1 Lead, 60' High		74.80		82.28		
1 Hammer, Diesel, 15K ft.-lbs.		587.60		646.36	28.77	31.65
64 L.H., Daily Totals		\$4730.60		\$6538.74	\$73.92	\$102.17
Crew B-45	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$43.23	\$65.72
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Dist. Tanker, 3000 Gallon		308.20		339.02		
1 Truck Tractor, 6x4, 380 H.P.		612.80		674.08	57.56	63.32
16 L.H., Daily Totals		\$1612.60		\$2064.70	\$100.79	\$129.04

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-46						
1 Pile Driver Foreman (outside)	\$46.40	\$371.20	\$73.60	\$588.80	\$40.86	\$64.01
2 Pile Drivers	44.40	710.40	70.40	1126.40		
3 Laborers	36.65	879.60	56.55	1357.20		
1 Chain Saw, Gas, 36" Long		45.00		49.50	.94	1.03
48 L.H., Daily Totals		\$2006.20		\$3121.90	\$41.80	\$65.04
Crew B-47						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Blast Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.78	\$62.52
1 Driller	36.65	293.20	56.55	452.40		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Track Drill, 4"		1040.00		1144.00		
1 Air Compressor, 600 cfm		552.60		607.86		
2 -50' Air Hoses, 3"		29.80		32.78	67.60	74.36
24 L.H., Daily Totals		\$2601.20		\$3285.04	\$108.38	\$136.88
Crew B-47A						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Drilling Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$44.15	\$67.28
1 Equip. Oper. (heavy)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Air Track Drill, 5"		1255.00		1380.50	52.29	57.52
24 L.H., Daily Totals		\$2314.60		\$2995.30	\$96.44	\$124.80
Crew B-47C						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.85	\$63.95
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Compressor, 750 cfm		559.20		615.12		
2 -50' Air Hoses, 3"		29.80		32.78		
1 Air Track Drill, 4"		1040.00		1144.00	101.81	111.99
16 L.H., Daily Totals		\$2298.60		\$2815.10	\$143.66	\$175.94
Crew B-47E						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.15	\$57.33
3 Laborers	36.65	879.60	56.55	1357.20		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	10.41	11.45
32 L.H., Daily Totals		\$1521.80		\$2200.70	\$47.56	\$68.77
Crew B-47G						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.75	\$61.02
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Track Drill, 4"		1040.00		1144.00		
1 Air Compressor, 600 cfm		552.60		607.86		
2 -50' Air Hoses, 3"		29.80		32.78		
1 Guniting Pump Rig		370.40		407.44	62.27	68.50
32 L.H., Daily Totals		\$3264.80		\$4144.88	\$102.03	\$129.53
Crew B-47H						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Skilled Worker Foreman (out)	\$49.30	\$394.40	\$76.35	\$610.80	\$47.80	\$74.03
3 Skilled Workers	47.30	1135.20	73.25	1758.00		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	10.41	11.45
32 L.H., Daily Totals		\$1862.60		\$2735.10	\$58.21	\$85.47

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-48						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.35	\$63.26
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Centr. Water Pump, 6"		340.80		374.88		
1 -20' Suction Hose, 6"		11.50		12.65		
1 -50' Discharge Hose, 6"		6.10		6.71		
1 Drill Rig, Truck-Mounted		2551.00		2806.10	51.95	57.15
56 L.H., Daily Totals		\$5225.00		\$6743.14	\$93.30	\$120.41
Crew B-49						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$42.91	\$65.99
3 Laborers	36.65	879.60	56.55	1357.20		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
2 Equip. Oper. (oilers)	43.55	696.80	66.00	1056.00		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
2 Pile Drivers	44.40	710.40	70.40	1126.40		
1 Hyd. Crane, 25 Ton		745.80		820.38		
1 Centr. Water Pump, 6"		340.80		374.88		
1 -20' Suction Hose, 6"		11.50		12.65		
1 -50' Discharge Hose, 6"		6.10		6.71		
1 Drill Rig, Truck-Mounted		2551.00		2806.10	41.54	45.69
88 L.H., Daily Totals		\$7431.60		\$9827.52	\$84.45	\$111.68
Crew B-50						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Pile Driver Foremen (outside)	\$46.40	\$742.40	\$73.60	\$1177.60	\$43.80	\$68.40
6 Pile Drivers	44.40	2131.20	70.40	3379.20		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
3 Laborers	36.65	879.60	56.55	1357.20		
1 Crawler Crane, 40 Ton		1179.00		1296.90		
1 Lead, 60' High		74.80		82.28		
1 Hammer, Diesel, 15K ft.-lbs.		587.60		646.36		
1 Air Compressor, 600 cfm		552.60		607.86		
2 -50' Air Hoses, 3"		29.80		32.78		
1 Chain Saw, Gas, 36" Long		45.00		49.50	22.04	24.25
112 L.H., Daily Totals		\$7374.40		\$10376.88	\$65.84	\$92.65
Crew B-51						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$36.96	\$56.92
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22	5.63	6.19
48 L.H., Daily Totals		\$2044.20		\$3029.62	\$42.59	\$63.12
Crew B-52						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$42.50	\$65.17
1 Carpenter	45.85	366.80	70.75	566.00		
3 Laborers	36.65	879.60	56.55	1357.20		
1 Cement Finisher	44.05	352.40	65.10	520.80		
.5 Rodman (reinf.)	50.65	202.60	79.55	318.20		
.5 Equip. Oper. (medium)	48.90	195.60	74.15	296.60		
.5 Crawler Loader, 3 C.Y.		595.50		655.05	10.63	11.70
56 L.H., Daily Totals		\$2975.30		\$4304.65	\$53.13	\$76.87
Crew B-53						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Trencher, Chain, 12 H.P.		71.20		78.32	8.90	9.79
8 L.H., Daily Totals		\$447.60		\$649.12	\$55.95	\$81.14

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-54						
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Trencher, Chain, 40 H.P.		339.40		373.34	42.42	46.67
8 L.H., Daily Totals		\$715.80		\$944.14	\$89.47	\$118.02
Crew B-54A						
.17 Labor Foreman (outside)	\$38.65	\$52.56	\$59.65	\$81.12	\$47.41	\$72.04
1 Equipment Operator (med.)	48.90	391.20	74.15	593.20		
1 Wheel Trencher, 67 H.P.		1206.00		1326.60	128.85	141.73
9.36 L.H., Daily Totals		\$1649.76		\$2000.92	\$176.26	\$213.77
Crew B-54B						
.25 Labor Foreman (outside)	\$38.65	\$77.30	\$59.65	\$119.30	\$46.85	\$71.25
1 Equipment Operator (med.)	48.90	391.20	74.15	593.20		
1 Wheel Trencher, 150 H.P.		1898.00		2087.80	189.80	208.78
10 L.H., Daily Totals		\$2366.50		\$2800.30	\$236.65	\$280.03
Crew B-54C						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$42.77	\$65.35
1 Equipment Operator (med.)	48.90	391.20	74.15	593.20		
1 Wheel Trencher, 67 H.P.		1206.00		1326.60	75.38	82.91
16 L.H., Daily Totals		\$1890.40		\$2372.20	\$118.15	\$148.26
Crew B-54D						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$42.77	\$65.35
1 Equipment Operator (med.)	48.90	391.20	74.15	593.20		
1 Rock Trencher, 6" Width		369.00		405.90	23.06	25.37
16 L.H., Daily Totals		\$1053.40		\$1451.50	\$65.84	\$90.72
Crew B-54E						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$42.77	\$65.35
1 Equipment Operator (med.)	48.90	391.20	74.15	593.20		
1 Rock Trencher, 18" Width		2590.00		2849.00	161.88	178.06
16 L.H., Daily Totals		\$3274.40		\$3894.60	\$204.65	\$243.41
Crew B-55						
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.60	\$56.27
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Truck-Mounted Earth Auger		786.40		865.04		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	46.64	51.31
24 L.H., Daily Totals		\$1997.80		\$2581.74	\$83.24	\$107.57
Crew B-56						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.85	\$63.95
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Track Drill, 4"		1040.00		1144.00		
1 Air Compressor, 600 cfm		552.60		607.86		
1 -50' Air Hose, 3"		14.90		16.39	100.47	110.52
16 L.H., Daily Totals		\$2277.10		\$2791.45	\$142.32	\$174.47

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-57						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$42.13	\$64.38
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 25 Ton		1173.00		1290.30		
1 Clamshell Bucket, 1 C.Y.		47.40		52.14		
1 Centr. Water Pump, 6"		340.80		374.88		
1 -20' Suction Hose, 6"		11.50		12.65		
20 -50' Discharge Hoses, 6"		122.00		134.20	35.31	38.84
48 L.H., Daily Totals		\$3717.10		\$4954.57	\$77.44	\$103.22
Crew B-58						
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$40.12	\$61.48
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Backhoe Loader, 48 H.P.		365.20		401.72		
1 Small Helicopter, w/ Pilot		2729.00		3001.90	128.93	141.82
24 L.H., Daily Totals		\$4057.00		\$4879.22	\$169.04	\$203.30
Crew B-59						
1 Truck Driver (heavy)	\$37.55	\$300.40	\$57.30	\$458.40	\$37.55	\$57.30
1 Truck Tractor, 220 H.P.		366.40		403.04		
1 Water Tank Trailer, 5000 Gal.		141.60		155.76	63.50	69.85
8 L.H., Daily Totals		\$808.40		\$1017.20	\$101.05	\$127.15
Crew B-59A						
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.95	\$56.80
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Water Tank Trailer, 5000 Gal.		141.60		155.76		
1 Truck Tractor, 220 H.P.		366.40		403.04	21.17	23.28
24 L.H., Daily Totals		\$1394.80		\$1922.00	\$58.12	\$80.08
Crew B-60						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$42.84	\$65.38
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
2 Equip. Oper. (light)	47.05	752.80	71.35	1141.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 40 Ton		1179.00		1296.90		
1 Lead, 60' High		74.80		82.28		
1 Hammer, Diesel, 15K ft.-lbs.		587.60		646.36		
1 Backhoe Loader, 48 H.P.		365.20		401.72	39.40	43.34
56 L.H., Daily Totals		\$4605.40		\$6088.46	\$82.24	\$108.72
Crew B-61						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.13	\$60.13
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Cement Mixer, 2 C.Y.		191.40		210.54		
1 Air Compressor, 160 cfm		157.40		173.14	8.72	9.59
40 L.H., Daily Totals		\$1914.00		\$2788.88	\$47.85	\$69.72
Crew B-62						
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$40.12	\$61.48
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Loader, Skid Steer, 30 H.P.		174.20		191.62	7.26	7.98
24 L.H., Daily Totals		\$1137.00		\$1667.22	\$47.38	\$69.47

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-63	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
4 Laborers	\$36.65	\$1172.80	\$56.55	\$1809.60	\$38.73	\$59.51
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Loader, Skid Steer, 30 H.P.		174.20		191.62	4.36	4.79
40 L.H., Daily Totals		\$1723.40		\$2572.02	\$43.09	\$64.30
Crew B-63B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (inside)	\$37.15	\$297.20	\$57.30	\$458.40	\$39.38	\$60.44
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Loader, Skid Steer, 78 H.P.		308.80		339.68	9.65	10.62
32 L.H., Daily Totals		\$1568.80		\$2273.68	\$49.02	\$71.05
Crew B-64	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.58	\$56.13
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Power Mulcher (small)		159.60		175.56		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22	26.86	29.55
16 L.H., Daily Totals		\$1015.00		\$1370.78	\$63.44	\$85.67
Crew B-65	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.58	\$56.13
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Power Mulcher (Large)		325.60		358.16		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22	37.24	40.96
16 L.H., Daily Totals		\$1181.00		\$1553.38	\$73.81	\$97.09
Crew B-66	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Loader-Backhoe, 40 H.P.		259.60		285.56	32.45	35.70
8 L.H., Daily Totals		\$636.00		\$856.36	\$79.50	\$107.05
Crew B-67	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Millwright	\$48.10	\$384.80	\$70.85	\$566.80	\$47.58	\$71.10
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Forklift, R/T, 4,000 Lb.		314.20		345.62	19.64	21.60
16 L.H., Daily Totals		\$1075.40		\$1483.22	\$67.21	\$92.70
Crew B-67B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Millwright Foreman (inside)	\$48.60	\$388.80	\$71.60	\$572.80	\$48.35	\$71.22
1 Millwright	48.10	384.80	70.85	566.80		
16 L.H., Daily Totals		\$773.60		\$1139.60	\$48.35	\$71.22
Crew B-68	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Millwrights	\$48.10	\$769.60	\$70.85	\$1133.60	\$47.75	\$71.02
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Forklift, R/T, 4,000 Lb.		314.20		345.62	13.09	14.40
24 L.H., Daily Totals		\$1460.20		\$2050.02	\$60.84	\$85.42
Crew B-68A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Millwright Foreman (inside)	\$48.60	\$388.80	\$71.60	\$572.80	\$48.27	\$71.10
2 Millwrights	48.10	769.60	70.85	1133.60		
1 Forklift, 8,000 Lb.		180.00		198.00	7.50	8.25
24 L.H., Daily Totals		\$1338.40		\$1904.40	\$55.77	\$79.35

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-68B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Millwright Foreman (inside)	\$48.60	\$388.80	\$71.60	\$572.80	\$52.37	\$78.11
2 Millwrights	48.10	769.60	70.85	1133.60		
2 Electricians	53.35	853.60	79.85	1277.60		
2 Plumbers	57.55	920.80	86.90	1390.40		
1 Forklift, 5,000 Lb.		324.80		357.28	5.80	6.38
56 L.H., Daily Totals		\$3257.60		\$4731.68	\$58.17	\$84.49
Crew B-68C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Millwright Foreman (inside)	\$48.60	\$388.80	\$71.60	\$572.80	\$51.90	\$77.30
1 Millwright	48.10	384.80	70.85	566.80		
1 Electrician	53.35	426.80	79.85	638.80		
1 Plumber	57.55	460.40	86.90	695.20		
1 Forklift, 5,000 Lb.		324.80		357.28	10.15	11.16
32 L.H., Daily Totals		\$1985.60		\$2830.88	\$62.05	\$88.47
Crew B-68D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (inside)	\$37.15	\$297.20	\$57.30	\$458.40	\$40.28	\$61.73
1 Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Forklift, 5,000 Lb.		324.80		357.28	13.53	14.89
24 L.H., Daily Totals		\$1291.60		\$1838.88	\$53.82	\$76.62
Crew B-68E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (inside)	\$51.60	\$412.80	\$91.05	\$728.40	\$51.20	\$90.37
3 Struc. Steel Workers	51.10	1226.40	90.20	2164.80		
1 Welder	51.10	408.80	90.20	721.60		
1 Forklift, 8,000 Lb.		180.00		198.00	4.50	4.95
40 L.H., Daily Totals		\$2228.00		\$3812.80	\$55.70	\$95.32
Crew B-68F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Skilled Worker Foreman (out)	\$49.30	\$394.40	\$76.35	\$610.80	\$47.97	\$74.28
2 Skilled Workers	47.30	756.80	73.25	1172.00		
1 Forklift, 5,000 Lb.		324.80		357.28	13.53	14.89
24 L.H., Daily Totals		\$1476.00		\$2140.08	\$61.50	\$89.17
Crew B-69	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.40	\$61.92
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 80 Ton		1652.00		1817.20	34.42	37.86
48 L.H., Daily Totals		\$3591.20		\$4789.20	\$74.82	\$99.78
Crew B-69A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.26	\$61.42
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Concrete Finisher	44.05	352.40	65.10	520.80		
1 Curb/Gutter Paver, 2-Track		898.00		987.80	18.71	20.58
48 L.H., Daily Totals		\$2830.40		\$3936.20	\$58.97	\$82.00
Crew B-69B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.26	\$61.42
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Curb/Gutter Paver, 4-Track		770.20		847.22	16.05	17.65
48 L.H., Daily Totals		\$2702.60		\$3795.62	\$56.30	\$79.08

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-70	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$42.19	\$64.54
3 Laborers	36.65	879.60	56.55	1357.20		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Ripper, Beam & 1 Shank		81.40		89.54		
1 Road Sweeper, S.P., 8' wide		665.40		731.94		
1 F.E. Loader, W.M., 1.5 C.Y.		373.40		410.74	32.63	35.89
56 L.H., Daily Totals		\$4189.60		\$5623.92	\$74.81	\$100.43
Crew B-70A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$46.45	\$70.63
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
1 Grader, 40,000 Lbs.		1120.00		1232.00		
1 F.E. Loader, W.M., 2.5 C.Y.		522.80		575.08		
1 Dozer, 80 H.P.		481.00		529.10		
1 Roller, Pneum. Whl., 12 Ton		349.00		383.90	61.82	68.00
40 L.H., Daily Totals		\$4330.80		\$5545.28	\$108.27	\$138.63
Crew B-71	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$42.19	\$64.54
3 Laborers	36.65	879.60	56.55	1357.20		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Pvm. Profiler, 750 H.P.		5877.00		6464.70		
1 Road Sweeper, S.P., 8' wide		665.40		731.94		
1 F.E. Loader, W.M., 1.5 C.Y.		373.40		410.74	123.50	135.85
56 L.H., Daily Totals		\$9278.20		\$11221.38	\$165.68	\$200.38
Crew B-72	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$43.02	\$65.74
3 Laborers	36.65	879.60	56.55	1357.20		
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
1 Pvm. Profiler, 750 H.P.		5877.00		6464.70		
1 Hammermill, 250 H.P.		1846.00		2030.60		
1 Windrow Loader		1240.00		1364.00		
1 Mix Paver 165 H.P.		2183.00		2401.30		
1 Roller, Pneum. Whl., 12 Ton		349.00		383.90	179.61	197.57
64 L.H., Daily Totals		\$14248.60		\$16851.70	\$222.63	\$263.31
Crew B-73	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$44.56	\$67.94
2 Laborers	36.65	586.40	56.55	904.80		
5 Equip. Oper. (medium)	48.90	1956.00	74.15	2966.00		
1 Road Mixer, 310 H.P.		1942.00		2136.20		
1 Tandem Roller, 10 Ton		242.00		266.20		
1 Hammermill, 250 H.P.		1846.00		2030.60		
1 Grader, 30,000 Lbs.		707.00		777.70		
5 F.E. Loader, W.M., 1.5 C.Y.		186.70		205.37		
5 Truck Tractor, 220 H.P.		183.20		201.52		
5 Water Tank Trailer, 5000 Gal.		70.80		77.88	80.90	88.99
64 L.H., Daily Totals		\$8029.30		\$10043.47	\$125.46	\$156.93

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-74	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$43.25	\$65.92
1 Laborer	36.65	293.20	56.55	452.40		
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Ripper, Beam & 1 Shank		81.40		89.54		
2 Stabilizers, 310 H.P.		3654.00		4019.40		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Chem. Spreader, Towed		53.20		58.52		
1 Roller, Vibratory, 25 Ton		692.80		762.08		
1 Water Tank Trailer, 5000 Gal.		141.60		155.76		
1 Truck Tractor, 220 H.P.		366.40		403.04	94.21	103.63
64 L.H., Daily Totals		\$8797.40		\$10851.54	\$137.46	\$169.56
Crew B-75	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$44.06	\$67.16
1 Laborer	36.65	293.20	56.55	452.40		
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Grader, 30,000 Lbs.		707.00		777.70		
1 Ripper, Beam & 1 Shank		81.40		89.54		
2 Stabilizers, 310 H.P.		3654.00		4019.40		
1 Dist. Tanker, 3000 Gallon		308.20		339.02		
1 Truck Tractor, 6x4, 380 H.P.		612.80		674.08		
1 Roller, Vibratory, 25 Ton		692.80		762.08	108.15	118.96
56 L.H., Daily Totals		\$8523.80		\$10422.62	\$152.21	\$186.12
Crew B-76	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Dock Builder Foreman (outside)	\$46.40	\$371.20	\$73.60	\$588.80	\$45.83	\$71.56
5 Dock Builders	44.40	1776.00	70.40	2816.00		
2 Equip. Oper. (crane)	50.25	804.00	76.20	1219.20		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 50 Ton		1319.00		1450.90		
1 Barge, 400 Ton		781.00		859.10		
1 Hammer, Diesel, 15K ft.-lbs.		587.60		646.36		
1 Lead, 60' High		74.80		82.28		
1 Air Compressor, 600 cfm		552.60		607.86		
2 -50' Air Hoses, 3"		29.80		32.78	46.46	51.10
72 L.H., Daily Totals		\$6644.40		\$8831.28	\$92.28	\$122.66
Crew B-76A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.46	\$60.58
5 Laborers	36.65	1466.00	56.55	2262.00		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 50 Ton		1319.00		1450.90		
1 Barge, 400 Ton		781.00		859.10	32.81	36.09
64 L.H., Daily Totals		\$4625.60		\$6186.80	\$72.28	\$96.67
Crew B-77	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.02	\$57.00
3 Laborers	36.65	879.60	56.55	1357.20		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Crack Cleaner, 25 H.P.		64.80		71.28		
1 Crack Filler, Trailer Mtd.		203.80		224.18		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	15.04	16.54
40 L.H., Daily Totals		\$2082.40		\$2941.76	\$52.06	\$73.54

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-78	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$36.96	\$56.92
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, S.P., 40 Gallon		154.80		170.28		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Pickup Truck, 3/4 Ton		157.00		172.70	13.43	14.78
48 L.H., Daily Totals		\$2418.80		\$3441.68	\$50.39	\$71.70
Crew B-78A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Line Rem. (Metal Balls) 115 H.P.		839.00		922.90	104.88	115.36
8 L.H., Daily Totals		\$1215.40		\$1493.70	\$151.93	\$186.71
Crew B-78B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$37.81	\$58.19
.25 Equip. Oper. (light)	47.05	94.10	71.35	142.70		
1 Pickup Truck, 3/4 Ton		157.00		172.70		
1 Line Rem., 11 H.P., Walk Behind		68.40		75.24		
.25 Road Sweeper, S.P., 8' wide		166.35		182.99	21.76	23.94
18 L.H., Daily Totals		\$1072.25		\$1478.43	\$59.57	\$82.13
Crew B-78C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$36.96	\$56.92
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, T.M., 120 Gal.		860.40		946.44		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Pickup Truck, 3/4 Ton		157.00		172.70	28.13	30.95
48 L.H., Daily Totals		\$3124.40		\$4217.84	\$65.09	\$87.87
Crew B-78D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Labor Foremen (outside)	\$38.65	\$618.40	\$59.65	\$954.40	\$37.03	\$57.09
7 Laborers	36.65	2052.40	56.55	3166.80		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, T.M., 120 Gal.		860.40		946.44		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
3 Pickup Trucks, 3/4 Ton		471.00		518.10		
1 Air Compressor, 60 cfm		137.40		151.14		
1 -50' Air Hose, 3/4"		3.25		3.58		
1 Breakers, Pavement, 60 lb.		9.80		10.78	22.69	24.95
80 L.H., Daily Totals		\$4777.65		\$6563.14	\$59.72	\$82.04
Crew B-78E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Labor Foremen (outside)	\$38.65	\$618.40	\$59.65	\$954.40	\$36.97	\$57.00
9 Laborers	36.65	2638.80	56.55	4071.60		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, T.M., 120 Gal.		860.40		946.44		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
4 Pickup Trucks, 3/4 Ton		628.00		690.80		
2 Air Compressor, 60 cfm		274.80		302.28		
2 -50' Air Hose, 3/4"		6.50		7.15		
2 Breakers, Pavement, 60 lb.		19.60		21.56	22.11	24.32
96 L.H., Daily Totals		\$5671.50		\$7806.13	\$59.08	\$81.31

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-78F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Labor Foremen (outside)	\$38.65	\$618.40	\$59.65	\$954.40	\$36.92	\$56.93
11 Laborers	36.65	3225.20	56.55	4976.40		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, T.M., 120 Gal.		860.40		946.44		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
7 Pickup Trucks, 3/4 Ton		1099.00		1208.90		
3 Air Compressor, 60 cfm		412.20		453.42		
3 -50' Air Hose, 3/4"		9.75		10.73		
3 Breakers, Pavement, 60 lb.		29.40		32.34	24.50	26.95
112 L.H., Daily Totals		\$6879.35		\$9394.52	\$61.42	\$83.88
Crew B-79	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.02	\$57.00
3 Laborers	36.65	879.60	56.55	1357.20		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, T.M., 120 Gal.		860.40		946.44		
1 Heating Kettle, 115 Gallon		63.00		69.30		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
2 Pickup Trucks, 3/4 Ton		314.00		345.40	39.26	43.19
40 L.H., Daily Totals		\$3051.20		\$4007.44	\$76.28	\$100.19
Crew B-79A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1.5 Equip. Oper. (light)	\$47.05	\$564.60	\$71.35	\$856.20	\$47.05	\$71.35
.5 Line Remov. (Grinder) 115 H.P.		465.30		511.83		
1 Line Rem. (Metal Balls) 115 H.P.		839.00		922.90	108.69	119.56
12 L.H., Daily Totals		\$1868.90		\$2290.93	\$155.74	\$190.91
Crew B-79B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Set of Gases		152.00		167.20	19.00	20.90
8 L.H., Daily Totals		\$445.20		\$619.60	\$55.65	\$77.45
Crew B-79C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$36.91	\$56.87
5 Laborers	36.65	1466.00	56.55	2262.00		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, T.M., 120 Gal.		860.40		946.44		
1 Heating Kettle, 115 Gallon		63.00		69.30		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
3 Pickup Trucks, 3/4 Ton		471.00		518.10		
1 Air Compressor, 60 cfm		137.40		151.14		
1 -50' Air Hose, 3/4"		3.25		3.58		
1 Breakers, Pavement, 60 lb.		9.80		10.78	33.53	36.89
56 L.H., Daily Totals		\$3945.05		\$5250.44	\$70.45	\$93.76
Crew B-79D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Labor Foremen (outside)	\$38.65	\$618.40	\$59.65	\$954.40	\$37.13	\$57.22
5 Laborers	36.65	1466.00	56.55	2262.00		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, T.M., 120 Gal.		860.40		946.44		
1 Heating Kettle, 115 Gallon		63.00		69.30		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
4 Pickup Trucks, 3/4 Ton		628.00		690.80		
1 Air Compressor, 60 cfm		137.40		151.14		
1 -50' Air Hose, 3/4"		3.25		3.58		
1 Breakers, Pavement, 60 lb.		9.80		10.78	31.79	34.97
64 L.H., Daily Totals		\$4411.25		\$5900.34	\$68.93	\$92.19

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-79E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Labor Foremen (outside)	\$38.65	\$618.40	\$59.65	\$954.40	\$37.03	\$57.09
7 Laborers	36.65	2052.40	56.55	3166.80		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Paint Striper, T.M., 120 Gal.		860.40		946.44		
1 Heating Kettle, 115 Gallon		63.00		69.30		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
5 Pickup Trucks, 3/4 Ton		785.00		863.50		
2 Air Compressors, 60 cfm		274.80		302.28		
2 50' Air Hoses, 3/4"		6.50		7.15		
2 Breakers, Pavement, 60 lb.		19.60		21.56	29.28	32.21
80 L.H., Daily Totals		\$5305.10		\$7143.33	\$66.31	\$89.29
Crew B-80	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.71	\$60.81
1 Laborer	36.65	293.20	56.55	452.40		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Earth Auger, Truck-Mtd.		425.00		467.50	23.69	26.06
32 L.H., Daily Totals		\$2028.80		\$2779.80	\$63.40	\$86.87
Crew B-80A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$36.65	\$56.55
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	13.88	15.26
24 L.H., Daily Totals		\$1212.60		\$1723.50	\$50.52	\$71.81
Crew B-80B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$39.25	\$60.25
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Crane, Flatbed Mounted, 3 Ton		248.40		273.24	7.76	8.54
32 L.H., Daily Totals		\$1504.40		\$2201.24	\$47.01	\$68.79
Crew B-80C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$36.60	\$56.27
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22		
1 Manual Fence Post Auger, Gas		8.00		8.80	11.59	12.75
24 L.H., Daily Totals		\$1156.60		\$1656.42	\$48.19	\$69.02
Crew B-81	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.03	\$62.67
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Hydromulcher, T.M., 3000 Gal.		340.40		374.44		
1 Truck Tractor, 220 H.P.		366.40		403.04	29.45	32.40
24 L.H., Daily Totals		\$1691.60		\$2281.48	\$70.48	\$95.06
Crew B-81A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.58	\$56.13
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Hydromulcher, T.M., 600 Gal.		132.60		145.86		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	29.10	32.01
16 L.H., Daily Totals		\$1050.80		\$1410.16	\$65.67	\$88.14
Crew B-82	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.85	\$63.95
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Horiz. Borer, 6 H.P.		83.00		91.30	5.19	5.71
16 L.H., Daily Totals		\$752.60		\$1114.50	\$47.04	\$69.66

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-82A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.85	\$63.95
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Flatbed Trailer, 25 Ton		113.60		124.96		
1 Horiz. Dir. Drill, 20k lb. Thrust		658.40		724.24	69.06	75.97
16 L.H., Daily Totals		\$1774.60		\$2238.70	\$110.91	\$139.92
Crew B-82B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$40.12	\$61.48
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Flatbed Trailer, 25 Ton		113.60		124.96		
1 Horiz. Dir. Drill, 30k lb. Thrust		936.20		1029.82	57.62	63.38
24 L.H., Daily Totals		\$2345.60		\$2996.68	\$97.73	\$124.86
Crew B-82C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$36.65	\$586.40	\$56.55	\$904.80	\$40.12	\$61.48
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Flatbed Trailer, 25 Ton		113.60		124.96		
1 Horiz. Dir. Drill, 50k lb. Thrust		1246.00		1370.60	70.53	77.58
24 L.H., Daily Totals		\$2655.40		\$3337.46	\$110.64	\$139.06
Crew B-82D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$47.05	\$71.35
1 Mud Trailer for HDD, 1500 Gal.		374.80		412.28	46.85	51.53
8 L.H., Daily Totals		\$751.20		\$983.08	\$93.90	\$122.89
Crew B-83	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Tugboat Captain	\$48.90	\$391.20	\$74.15	\$593.20	\$42.77	\$65.35
1 Tugboat Hand	36.65	293.20	56.55	452.40		
1 Tugboat, 250 H.P.		889.40		978.34	55.59	61.15
16 L.H., Daily Totals		\$1573.80		\$2023.94	\$98.36	\$126.50
Crew B-84	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$48.90	\$74.15
1 Rotary Mower/Tractor		364.20		400.62	45.52	50.08
8 L.H., Daily Totals		\$755.40		\$993.82	\$94.42	\$124.23
Crew B-85	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$39.28	\$60.22
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Aerial Lift Truck, 80'		643.00		707.30		
1 Brush Chipper, 12", 130 H.P.		396.60		436.26		
1 Pruning Saw, Rotary		6.55		7.21	26.15	28.77
40 L.H., Daily Totals		\$2617.35		\$3559.57	\$65.43	\$88.99
Crew B-86	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$48.90	\$74.15
1 Stump Chipper, S.P.		162.10		178.31	20.26	22.29
8 L.H., Daily Totals		\$553.30		\$771.51	\$69.16	\$96.44
Crew B-86A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$48.90	\$74.15
1 Grader, 30,000 Lbs.		707.00		777.70	88.38	97.21
8 L.H., Daily Totals		\$1098.20		\$1370.90	\$137.28	\$171.36

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-86B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$48.90	\$74.15
1 Dozer, 200 H.P.		1325.00		1457.50	165.63	182.19
8 L.H., Daily Totals		\$1716.20		\$2050.70	\$214.53	\$256.34
Crew B-87	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$46.45	\$70.63
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
2 Feller Bunchers, 100 H.P.		1458.00		1603.80		
1 Log Chipper, 22" Tree		898.60		988.46		
1 Dozer, 105 H.P.		591.80		650.98		
1 Chain Saw, Gas, 36" Long		45.00		49.50	74.83	82.32
40 L.H., Daily Totals		\$4851.40		\$6117.94	\$121.29	\$152.95
Crew B-88	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$47.15	\$71.64
6 Equip. Oper. (medium)	48.90	2347.20	74.15	3559.20		
2 Feller Bunchers, 100 H.P.		1458.00		1603.80		
1 Log Chipper, 22" Tree		898.60		988.46		
2 Log Skidders, 50 H.P.		1839.20		2023.12		
1 Dozer, 105 H.P.		591.80		650.98		
1 Chain Saw, Gas, 36" Long		45.00		49.50	86.30	94.93
56 L.H., Daily Totals		\$7473.00		\$9327.46	\$133.45	\$166.56
Crew B-89	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$41.77	\$63.52
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30		
1 Concrete Saw		175.20		192.72		
1 Water Tank, 65 Gal.		17.30		19.03	32.84	36.13
16 L.H., Daily Totals		\$1193.90		\$1594.45	\$74.62	\$99.65
Crew B-89A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Skilled Worker	\$47.30	\$378.40	\$73.25	\$586.00	\$41.98	\$64.90
1 Laborer	36.65	293.20	56.55	452.40		
1 Core Drill (Large)		116.20		127.82	7.26	7.99
16 L.H., Daily Totals		\$787.80		\$1166.22	\$49.24	\$72.89
Crew B-89B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$47.05	\$376.40	\$71.35	\$570.80	\$41.77	\$63.52
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Wall Saw, Hydraulic, 10 H.P.		119.60		131.56		
1 Generator, Diesel, 100 kW		439.20		483.12		
1 Water Tank, 65 Gal.		17.30		19.03		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	56.82	62.50
16 L.H., Daily Totals		\$1577.50		\$2016.41	\$98.59	\$126.03
Crew B-90	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.73	\$60.83
3 Laborers	36.65	879.60	56.55	1357.20		
2 Equip. Oper. (light)	47.05	752.80	71.35	1141.60		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Road Mixer, 310 H.P.		1942.00		2136.20		
1 Dist. Truck, 2000 Gal.		278.20		306.02	34.69	38.16
64 L.H., Daily Totals		\$4762.60		\$6335.02	\$74.42	\$98.98

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-90A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$43.94	\$67.05
2 Laborers	36.65	586.40	56.55	904.80		
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
2 Graders, 30,000 Lbs.		1414.00		1555.40		
1 Tandem Roller, 10 Ton		242.00		266.20		
1 Roller, Pneum. Whl., 12 Ton		349.00		383.90	35.80	39.38
56 L.H., Daily Totals		\$4465.40		\$5960.30	\$79.74	\$106.43
Crew B-90B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$43.11	\$65.87
2 Laborers	36.65	586.40	56.55	904.80		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Roller, Pneum. Whl., 12 Ton		349.00		383.90		
1 Road Mixer, 310 H.P.		1942.00		2136.20	47.73	52.50
48 L.H., Daily Totals		\$4360.20		\$5681.70	\$90.84	\$118.37
Crew B-90C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.42	\$61.84
4 Laborers	36.65	1172.80	56.55	1809.60		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
3 Truck Drivers (heavy)	37.55	901.20	57.30	1375.20		
3 Road Mixers, 310 H.P.		5826.00		6408.60	66.20	72.83
88 L.H., Daily Totals		\$9382.80		\$11850.20	\$106.62	\$134.66
Crew B-90D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.84	\$61.02
6 Laborers	36.65	1759.20	56.55	2714.40		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
3 Truck Drivers (heavy)	37.55	901.20	57.30	1375.20		
3 Road Mixers, 310 H.P.		5826.00		6408.60	56.02	61.62
104 L.H., Daily Totals		\$9969.20		\$12755.00	\$95.86	\$122.64
Crew B-90E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.06	\$62.84
4 Laborers	36.65	1172.80	56.55	1809.60		
3 Equip. Oper. (medium)	48.90	1173.60	74.15	1779.60		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Road Mixers, 310 H.P.		1942.00		2136.20	26.97	29.67
72 L.H., Daily Totals		\$4898.00		\$6661.00	\$68.03	\$92.51
Crew B-91	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$43.14	\$65.83
2 Laborers	36.65	586.40	56.55	904.80		
4 Equip. Oper. (medium)	48.90	1564.80	74.15	2372.80		
1 Truck Driver (heavy)	37.55	300.40	57.30	458.40		
1 Dist. Tanker, 3000 Gallon		308.20		339.02		
1 Truck Tractor, 6x4, 380 H.P.		612.80		674.08		
1 Aggreg. Spreader, S.P.		841.00		925.10		
1 Roller, Pneum. Whl., 12 Ton		349.00		383.90		
1 Tandem Roller, 10 Ton		242.00		266.20	36.77	40.44
64 L.H., Daily Totals		\$5113.80		\$6801.50	\$79.90	\$106.27
Crew B-91B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$42.77	\$65.35
1 Equipment Oper. (med.)	48.90	391.20	74.15	593.20		
1 Road Sweeper, Vac. Assist.		994.40		1093.84	62.15	68.36
16 L.H., Daily Totals		\$1678.80		\$2139.44	\$104.93	\$133.72

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-91C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.58	\$56.13
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Catch Basin Cleaning Truck		604.00		664.40	37.75	41.52
16 L.H., Daily Totals		\$1189.20		\$1562.40	\$74.33	\$97.65
Crew B-91D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.65	\$63.67
5 Laborers	36.65	1466.00	56.55	2262.00		
5 Equip. Oper. (medium)	48.90	1956.00	74.15	2966.00		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
1 Aggreg. Spreader, S.P.		841.00		925.10		
2 Truck Tractor, 6x4, 380 H.P.		1225.60		1348.16		
2 Dist. Tanker, 3000 Gallon		616.40		678.04		
2 Pavement Brush, Towed		163.20		179.52		
2 Roller, Pneum. Whl., 12 Ton		698.00		767.80	34.08	37.49
104 L.H., Daily Totals		\$7876.20		\$10520.62	\$75.73	\$101.16
Crew B-92	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.15	\$57.33
3 Laborers	36.65	879.60	56.55	1357.20		
1 Crack Cleaner, 25 H.P.		64.80		71.28		
1 Air Compressor, 60 cfm		137.40		151.14		
1 Tar Kettle, T.M.		104.60		115.06		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	19.99	21.99
32 L.H., Daily Totals		\$1828.60		\$2538.18	\$57.14	\$79.32
Crew B-93	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$48.90	\$391.20	\$74.15	\$593.20	\$48.90	\$74.15
1 Feller Buncher, 100 H.P.		729.00		801.90	91.13	100.24
8 L.H., Daily Totals		\$1120.20		\$1395.10	\$140.03	\$174.39
Crew B-94A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Diaphragm Water Pump, 2"		72.00		79.20		
1 -20' Suction Hose, 2"		1.95		2.15		
2 -50' Discharge Hoses, 2"		1.80		1.98	9.47	10.42
8 L.H., Daily Totals		\$368.95		\$535.73	\$46.12	\$66.97
Crew B-94B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Diaphragm Water Pump, 4"		115.80		127.38		
1 -20' Suction Hose, 4"		3.25		3.58		
2 -50' Discharge Hoses, 4"		4.70		5.17	15.47	17.02
8 L.H., Daily Totals		\$416.95		\$588.52	\$52.12	\$73.57
Crew B-94C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Centrifugal Water Pump, 3"		78.80		86.68		
1 -20' Suction Hose, 3"		2.85		3.13		
2 -50' Discharge Hoses, 3"		3.00		3.30	10.58	11.64
8 L.H., Daily Totals		\$377.85		\$545.51	\$47.23	\$68.19
Crew B-94D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Centr. Water Pump, 6"		340.80		374.88		
1 -20' Suction Hose, 6"		11.50		12.65		
2 -50' Discharge Hoses, 6"		12.20		13.42	45.56	50.12
8 L.H., Daily Totals		\$657.70		\$853.35	\$82.21	\$106.67

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Carpenters	\$45.85	\$1100.40	\$70.75	\$1698.00	\$43.55	\$67.20
1 Laborer	36.65	293.20	56.55	452.40		
32 L.H., Daily Totals		\$1393.60		\$2150.40	\$43.55	\$67.20
Crew C-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$44.65	\$68.90
4 Carpenters	45.85	1467.20	70.75	2264.00		
1 Laborer	36.65	293.20	56.55	452.40		
48 L.H., Daily Totals		\$2143.20		\$3307.20	\$44.65	\$68.90
Crew C-2A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$44.35	\$67.96
3 Carpenters	45.85	1100.40	70.75	1698.00		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Laborer	36.65	293.20	56.55	452.40		
48 L.H., Daily Totals		\$2128.80		\$3262.00	\$44.35	\$67.96
Crew C-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Rodman Foreman (outside)	\$52.65	\$421.20	\$82.70	\$661.60	\$46.95	\$73.17
4 Rodmen (reinf.)	50.65	1620.80	79.55	2545.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
2 Laborers	36.65	586.40	56.55	904.80		
3 Stressing Equipment		30.60		33.66		
5 Grouting Equipment		82.10		90.31	1.76	1.94
64 L.H., Daily Totals		\$3117.50		\$4806.77	\$48.71	\$75.11
Crew C-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Rodman Foreman (outside)	\$52.65	\$421.20	\$82.70	\$661.60	\$51.15	\$80.34
3 Rodmen (reinf.)	50.65	1215.60	79.55	1909.20		
3 Stressing Equipment		30.60		33.66	.96	1.05
32 L.H., Daily Totals		\$1667.40		\$2604.46	\$52.11	\$81.39
Crew C-4A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Rodmen (reinf.)	\$50.65	\$810.40	\$79.55	\$1272.80	\$50.65	\$79.55
4 Stressing Equipment		40.80		44.88	2.55	2.81
16 L.H., Daily Totals		\$851.20		\$1317.68	\$53.20	\$82.36
Crew C-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Rodman Foreman (outside)	\$52.65	\$421.20	\$82.70	\$661.60	\$49.86	\$77.59
4 Rodmen (reinf.)	50.65	1620.80	79.55	2545.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 25 Ton		745.80		820.38	13.32	14.65
56 L.H., Daily Totals		\$3538.20		\$5165.18	\$63.18	\$92.24
Crew C-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.22	\$58.49
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Cement Finisher	44.05	352.40	65.10	520.80		
2 Gas Engine Vibrators		66.00		72.60	1.38	1.51
48 L.H., Daily Totals		\$1900.40		\$2880.20	\$39.59	\$60.00

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-7						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.82	\$60.85
5 Laborers	36.65	1466.00	56.55	2262.00		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
2 Gas Engine Vibrators		66.00		72.60		
1 Concrete Bucket, 1 C.Y.		23.00		25.30		
1 Hyd. Crane, 55 Ton		1137.00		1250.70	17.03	18.73
72 L.H., Daily Totals		\$4093.20		\$5729.80	\$56.85	\$79.58
Crew C-7A						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.13	\$57.13
5 Laborers	36.65	1466.00	56.55	2262.00		
2 Truck Drivers (heavy)	37.55	600.80	57.30	916.80		
2 Conc. Transit Mixers		2050.00		2255.00	32.03	35.23
64 L.H., Daily Totals		\$4426.00		\$5911.00	\$69.16	\$92.36
Crew C-7B						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.46	\$60.58
5 Laborers	36.65	1466.00	56.55	2262.00		
1 Equipment Operator, Crane	50.25	402.00	76.20	609.60		
1 Equipment Oiler	43.55	348.40	66.00	528.00		
1 Conc. Bucket, 2 C.Y.		35.60		39.16		
1 Lattice Boom Crane, 165 Ton		1954.00		2149.40	31.09	34.20
64 L.H., Daily Totals		\$4515.20		\$6065.36	\$70.55	\$94.77
Crew C-7C						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.96	\$61.34
5 Laborers	36.65	1466.00	56.55	2262.00		
2 Equipment Operators (med.)	48.90	782.40	74.15	1186.40		
2 F.E. Loaders, W.M., 4 C.Y.		1347.60		1482.36	21.06	23.16
64 L.H., Daily Totals		\$3905.20		\$5407.96	\$61.02	\$84.50
Crew C-7D						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$38.69	\$59.51
5 Laborers	36.65	1466.00	56.55	2262.00		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Concrete Conveyer		205.40		225.94	3.67	4.03
56 L.H., Daily Totals		\$2371.80		\$3558.34	\$42.35	\$63.54
Crew C-8						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.80	\$61.95
3 Laborers	36.65	879.60	56.55	1357.20		
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Concrete Pump (Small)		710.40		781.44	12.69	13.95
56 L.H., Daily Totals		\$2995.20		\$4250.64	\$53.49	\$75.90
Crew C-8A						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.45	\$59.92
3 Laborers	36.65	879.60	56.55	1357.20		
2 Cement Finishers	44.05	704.80	65.10	1041.60		
48 L.H., Daily Totals		\$1893.60		\$2876.00	\$39.45	\$59.92

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-8B						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.50	\$60.69
3 Laborers	36.65	879.60	56.55	1357.20		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Vibrating Power Screed		63.25		69.58		
1 Roller, Vibratory, 25 Ton		692.80		762.08		
1 Dozer, 200 H.P.		1325.00		1457.50	52.03	57.23
40 L.H., Daily Totals		\$3661.05		\$4716.76	\$91.53	\$117.92
Crew C-8C						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.26	\$61.42
3 Laborers	36.65	879.60	56.55	1357.20		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Shotcrete Rig, 12 C.Y./hr		252.80		278.08		
1 Air Compressor, 160 cfm		157.40		173.14		
4 -50' Air Hoses, 1"		16.40		18.04		
4 -50' Air Hoses, 2"		31.00		34.10	9.53	10.49
48 L.H., Daily Totals		\$2390.00		\$3451.76	\$49.79	\$71.91
Crew C-8D						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.60	\$63.16
1 Laborer	36.65	293.20	56.55	452.40		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equipment Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Compressor, 250 cfm		202.40		222.64		
2 -50' Air Hoses, 1"		8.20		9.02	6.58	7.24
32 L.H., Daily Totals		\$1541.80		\$2252.86	\$48.18	\$70.40
Crew C-8E						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.95	\$60.96
3 Laborers	36.65	879.60	56.55	1357.20		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equipment Oper. (light)	47.05	376.40	71.35	570.80		
1 Shotcrete Rig, 35 C.Y./hr		284.40		312.84		
1 Air Compressor, 250 cfm		202.40		222.64		
4 -50' Air Hoses, 1"		16.40		18.04		
4 -50' Air Hoses, 2"		31.00		34.10	11.13	12.24
48 L.H., Daily Totals		\$2451.80		\$3513.62	\$51.08	\$73.20
Crew C-10						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.58	\$62.25
2 Cement Finishers	44.05	704.80	65.10	1041.60		
24 L.H., Daily Totals		\$998.00		\$1494.00	\$41.58	\$62.25
Crew C-10B						
3 Laborers	\$36.65	\$879.60	\$56.55	\$1357.20	\$39.61	\$59.97
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Concrete Mixer, 10 C.F.		176.80		194.48		
2 Trowels, 48" Walk-Behind		107.20		117.92	7.10	7.81
40 L.H., Daily Totals		\$1868.40		\$2711.20	\$46.71	\$67.78
Crew C-10C						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.58	\$62.25
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Trowel, 48" Walk-Behind		53.60		58.96	2.23	2.46
24 L.H., Daily Totals		\$1051.60		\$1552.96	\$43.82	\$64.71

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-10D						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.58	\$62.25
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Vibrating Power Screenshot		63.25		69.58		
1 Trowel, 48" Walk-Behind		53.60		58.96	4.87	5.36
24 L.H., Daily Totals		\$1114.85		\$1622.54	\$46.45	\$67.61
Crew C-10E						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.58	\$62.25
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Vibrating Power Screenshot		63.25		69.58		
1 Cement Trowel, 96" Ride-On		197.40		217.14	10.86	11.95
24 L.H., Daily Totals		\$1258.65		\$1780.71	\$52.44	\$74.20
Crew C-10F						
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$41.58	\$62.25
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Aerial Lift Truck, 60' Boom		456.00		501.60	19.00	20.90
24 L.H., Daily Totals		\$1454.00		\$1995.60	\$60.58	\$83.15
Crew C-11						
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$50.39	\$86.34
6 Struc. Steel Workers	51.10	2452.80	90.20	4329.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Lattice Boom Crane, 150 Ton		1838.00		2021.80	25.53	28.08
72 L.H., Daily Totals		\$5466.00		\$8238.60	\$75.92	\$114.43
Crew C-12						
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$45.38	\$69.81
3 Carpenters	45.85	1100.40	70.75	1698.00		
1 Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Crane, 12 Ton		663.00		729.30	13.81	15.19
48 L.H., Daily Totals		\$2841.40		\$4080.10	\$59.20	\$85.00
Crew C-13						
1 Struc. Steel Worker	\$51.10	\$408.80	\$90.20	\$721.60	\$49.35	\$83.72
1 Welder	51.10	408.80	90.20	721.60		
1 Carpenter	45.85	366.80	70.75	566.00		
1 Welder, Gas Engine, 300 amp		142.00		156.20	5.92	6.51
24 L.H., Daily Totals		\$1326.40		\$2165.40	\$55.27	\$90.22
Crew C-14						
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$44.90	\$69.13
5 Carpenters	45.85	1834.00	70.75	2830.00		
4 Laborers	36.65	1172.80	56.55	1809.60		
4 Rodmen (reinf.)	50.65	1620.80	79.55	2545.60		
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 80 Ton		1652.00		1817.20	11.47	12.62
144 L.H., Daily Totals		\$8117.60		\$11772.40	\$56.37	\$81.75

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-14A						
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$46.01	\$71.06
16 Carpenters	45.85	5868.80	70.75	9056.00		
4 Rodmen (reinf.)	50.65	1620.80	79.55	2545.60		
2 Laborers	36.65	586.40	56.55	904.80		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Gas Engine Vibrator		33.00		36.30		
1 Concrete Pump (Small)		710.40		781.44	3.72	4.09
200 L.H., Daily Totals		\$9945.80		\$15028.94	\$49.73	\$75.14
Crew C-14B						
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$45.94	\$70.83
16 Carpenters	45.85	5868.80	70.75	9056.00		
4 Rodmen (reinf.)	50.65	1620.80	79.55	2545.60		
2 Laborers	36.65	586.40	56.55	904.80		
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Gas Engine Vibrator		33.00		36.30		
1 Concrete Pump (Small)		710.40		781.44	3.57	3.93
208 L.H., Daily Totals		\$10298.20		\$15549.74	\$49.51	\$74.76
Crew C-14C						
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$43.92	\$67.77
6 Carpenters	45.85	2200.80	70.75	3396.00		
2 Rodmen (reinf.)	50.65	810.40	79.55	1272.80		
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Gas Engine Vibrator		33.00		36.30	.29	.32
112 L.H., Daily Totals		\$4952.20		\$7626.30	\$44.22	\$68.09
Crew C-14D						
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$45.63	\$70.35
18 Carpenters	45.85	6602.40	70.75	10188.00		
2 Rodmen (reinf.)	50.65	810.40	79.55	1272.80		
2 Laborers	36.65	586.40	56.55	904.80		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Gas Engine Vibrator		33.00		36.30		
1 Concrete Pump (Small)		710.40		781.44	3.72	4.09
200 L.H., Daily Totals		\$9869.00		\$14888.14	\$49.34	\$74.44
Crew C-14E						
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$45.10	\$69.85
2 Carpenters	45.85	733.60	70.75	1132.00		
4 Rodmen (reinf.)	50.65	1620.80	79.55	2545.60		
3 Laborers	36.65	879.60	56.55	1357.20		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Gas Engine Vibrator		33.00		36.30	.38	.41
88 L.H., Daily Totals		\$4002.20		\$6182.70	\$45.48	\$70.26
Crew C-14F						
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.81	\$62.59
2 Laborers	36.65	586.40	56.55	904.80		
6 Cement Finishers	44.05	2114.40	65.10	3124.80		
1 Gas Engine Vibrator		33.00		36.30	.46	.50
72 L.H., Daily Totals		\$3043.00		\$4543.10	\$42.26	\$63.10

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-14G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.16	\$61.88
2 Laborers	36.65	586.40	56.55	904.80		
4 Cement Finishers	44.05	1409.60	65.10	2083.20		
1 Gas Engine Vibrator		33.00		36.30	.59	.65
56 L.H., Daily Totals		\$2338.20		\$3501.50	\$41.75	\$62.53
Crew C-14H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$45.15	\$69.42
2 Carpenters	45.85	733.60	70.75	1132.00		
1 Rodman (reinf.)	50.65	405.20	79.55	636.40		
1 Laborer	36.65	293.20	56.55	452.40		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Gas Engine Vibrator		33.00		36.30	.69	.76
48 L.H., Daily Totals		\$2200.20		\$3368.70	\$45.84	\$70.18
Crew C-14L	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$42.80	\$65.80
6 Carpenters	45.85	2200.80	70.75	3396.00		
4 Laborers	36.65	1172.80	56.55	1809.60		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Gas Engine Vibrator		33.00		36.30	.34	.38
96 L.H., Daily Totals		\$4141.80		\$6353.50	\$43.14	\$66.18
Crew C-14M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$44.56	\$68.41
2 Carpenters	45.85	733.60	70.75	1132.00		
1 Rodman (reinf.)	50.65	405.20	79.55	636.40		
2 Laborers	36.65	586.40	56.55	904.80		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Gas Engine Vibrator		33.00		36.30		
1 Concrete Pump (Small)		710.40		781.44	11.62	12.78
64 L.H., Daily Totals		\$3595.00		\$5195.74	\$56.17	\$81.18
Crew C-15	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$43.14	\$66.08
2 Carpenters	45.85	733.60	70.75	1132.00		
3 Laborers	36.65	879.60	56.55	1357.20		
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Rodman (reinf.)	50.65	405.20	79.55	636.40		
72 L.H., Daily Totals		\$3106.00		\$4758.00	\$43.14	\$66.08
Crew C-16	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$40.80	\$61.95
3 Laborers	36.65	879.60	56.55	1357.20		
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Guniting Pump Rig		370.40		407.44		
2 -50' Air Hoses, 3/4"		6.50		7.15		
2 -50' Air Hoses, 2"		15.50		17.05	7.01	7.71
56 L.H., Daily Totals		\$2677.20		\$3900.84	\$47.81	\$69.66
Crew C-16A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$43.41	\$65.22
2 Cement Finishers	44.05	704.80	65.10	1041.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Guniting Pump Rig		370.40		407.44		
2 -50' Air Hoses, 3/4"		6.50		7.15		
2 -50' Air Hoses, 2"		15.50		17.05		
1 Aerial Lift Truck, 60' Boom		456.00		501.60	26.51	29.16
32 L.H., Daily Totals		\$2237.60		\$3020.44	\$69.92	\$94.39

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-17	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Worker Foremen (out)	\$49.30	\$788.80	\$76.35	\$1221.60	\$47.70	\$73.87
8 Skilled Workers	47.30	3027.20	73.25	4688.00		
80 L.H., Daily Totals		\$3816.00		\$5909.60	\$47.70	\$73.87
Crew C-17A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Worker Foremen (out)	\$49.30	\$788.80	\$76.35	\$1221.60	\$47.73	\$73.90
8 Skilled Workers	47.30	3027.20	73.25	4688.00		
.125 Equip. Oper. (crane)	50.25	50.25	76.20	76.20		
.125 Hyd. Crane, 80 Ton		206.50		227.15	2.55	2.80
81 L.H., Daily Totals		\$4072.75		\$6212.95	\$50.28	\$76.70
Crew C-17B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Worker Foremen (out)	\$49.30	\$788.80	\$76.35	\$1221.60	\$47.76	\$73.93
8 Skilled Workers	47.30	3027.20	73.25	4688.00		
.25 Equip. Oper. (crane)	50.25	100.50	76.20	152.40		
.25 Hyd. Crane, 80 Ton		413.00		454.30		
.25 Trowel, 48" Walk-Behind		13.40		14.74	5.20	5.72
82 L.H., Daily Totals		\$4342.90		\$6531.04	\$52.96	\$79.65
Crew C-17C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Worker Foremen (out)	\$49.30	\$788.80	\$76.35	\$1221.60	\$47.79	\$73.95
8 Skilled Workers	47.30	3027.20	73.25	4688.00		
.375 Equip. Oper. (crane)	50.25	150.75	76.20	228.60		
.375 Hyd. Crane, 80 Ton		619.50		681.45	7.46	8.21
83 L.H., Daily Totals		\$4586.25		\$6819.65	\$55.26	\$82.16
Crew C-17D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Worker Foremen (out)	\$49.30	\$788.80	\$76.35	\$1221.60	\$47.82	\$73.98
8 Skilled Workers	47.30	3027.20	73.25	4688.00		
.5 Equip. Oper. (crane)	50.25	201.00	76.20	304.80		
.5 Hyd. Crane, 80 Ton		826.00		908.60	9.83	10.82
84 L.H., Daily Totals		\$4843.00		\$7123.00	\$57.65	\$84.80
Crew C-17E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Worker Foremen (out)	\$49.30	\$788.80	\$76.35	\$1221.60	\$47.70	\$73.87
8 Skilled Workers	47.30	3027.20	73.25	4688.00		
1 Hyd. Jack with Rods		94.55		104.01	1.18	1.30
80 L.H., Daily Totals		\$3910.55		\$6013.60	\$48.88	\$75.17
Crew C-18	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
.125 Labor Foreman (outside)	\$38.65	\$38.65	\$59.65	\$59.65	\$36.87	\$56.89
1 Laborer	36.65	293.20	56.55	452.40		
1 Concrete Cart, 10 C.F.		60.20		66.22	6.69	7.36
9 L.H., Daily Totals		\$392.05		\$578.27	\$43.56	\$64.25
Crew C-19	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
.125 Labor Foreman (outside)	\$38.65	\$38.65	\$59.65	\$59.65	\$36.87	\$56.89
1 Laborer	36.65	293.20	56.55	452.40		
1 Concrete Cart, 18 C.F.		101.20		111.32	11.24	12.37
9 L.H., Daily Totals		\$433.05		\$623.37	\$48.12	\$69.26
Crew C-20	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.36	\$60.21
5 Laborers	36.65	1466.00	56.55	2262.00		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
2 Gas Engine Vibrators		66.00		72.60		
1 Concrete Pump (Small)		710.40		781.44	12.13	13.34
64 L.H., Daily Totals		\$3295.20		\$4707.24	\$51.49	\$73.55

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-21	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$39.36	\$60.21
5 Laborers	36.65	1466.00	56.55	2262.00		
1 Cement Finisher	44.05	352.40	65.10	520.80		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
2 Gas Engine Vibrators		66.00		72.60		
1 Concrete Conveyor		205.40		225.94	4.24	4.66
64 L.H., Daily Totals		\$2790.20		\$4151.74	\$43.60	\$64.87
Crew C-22	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Rodman Foreman (outside)	\$52.65	\$421.20	\$82.70	\$661.60	\$50.85	\$79.75
4 Rodmen (rein.)	50.65	1620.80	79.55	2545.60		
.125 Equip. Oper. (crane)	50.25	50.25	76.20	76.20		
.125 Equip. Oper. (oiler)	43.55	43.55	66.00	66.00		
.125 Hyd. Crane, 25 Ton		93.22		102.55	2.22	2.44
42 L.H., Daily Totals		\$2229.03		\$3451.95	\$53.07	\$82.19
Crew C-23	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Worker Foremen (out)	\$49.30	\$788.80	\$76.35	\$1221.60	\$47.62	\$73.44
6 Skilled Workers	47.30	2270.40	73.25	3516.00		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Lattice Boom Crane, 90 Ton		1529.00		1681.90	19.11	21.02
80 L.H., Daily Totals		\$5338.60		\$7557.10	\$66.73	\$94.46
Crew C-23A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$41.15	\$62.99
2 Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Crawler Crane, 100 Ton		1703.00		1873.30		
3 Conc. Buckets, 8 C.Y.		595.80		655.38	57.47	63.22
40 L.H., Daily Totals		\$3944.80		\$5048.28	\$98.62	\$126.21
Crew C-24	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Worker Foremen (out)	\$49.30	\$788.80	\$76.35	\$1221.60	\$47.62	\$73.44
6 Skilled Workers	47.30	2270.40	73.25	3516.00		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Lattice Boom Crane, 150 Ton		1838.00		2021.80	22.98	25.27
88 L.H., Daily Totals		\$5647.60		\$7897.00	\$70.59	\$98.71
Crew C-25	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Rodmen (rein.)	\$50.65	\$810.40	\$79.55	\$1272.80	\$39.90	\$64.58
2 Rodmen Helpers	29.15	466.40	49.60	793.60		
32 L.H., Daily Totals		\$1276.80		\$2066.40	\$39.90	\$64.58
Crew C-27	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Cement Finishers	\$44.05	\$704.80	\$65.10	\$1041.60	\$44.05	\$65.10
1 Concrete Saw		175.20		192.72	10.95	12.05
16 L.H., Daily Totals		\$880.00		\$1234.32	\$55.00	\$77.14
Crew C-28	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Cement Finisher	\$44.05	\$352.40	\$65.10	\$520.80	\$44.05	\$65.10
1 Portable Air Compressor, Gas		17.70		19.47	2.21	2.43
8 L.H., Daily Totals		\$370.10		\$540.27	\$46.26	\$67.53
Crew C-29	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
Pressure Washer		69.40		76.34	8.68	9.54
8 L.H., Daily Totals		\$362.60		\$528.74	\$45.33	\$66.09

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-30	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Concrete Mixer, 10 C.F.		176.80		194.48	22.10	24.31
8 L.H., Daily Totals		\$470.00		\$646.88	\$58.75	\$80.86
Crew C-31	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Cement Finisher	\$44.05	\$352.40	\$65.10	\$520.80	\$44.05	\$65.10
1 Grout Pump		370.40		407.44	46.30	50.93
8 L.H., Daily Totals		\$722.80		\$928.24	\$90.35	\$116.03
Crew C-32	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Cement Finisher	\$44.05	\$352.40	\$65.10	\$520.80	\$40.35	\$60.83
1 Laborer	36.65	293.20	56.55	452.40		
1 Crack Chaser Saw, Gas, 6 H.P.		30.80		33.88		
1 Vacuum Pick-Up System		60.75		66.83	5.72	6.29
16 L.H., Daily Totals		\$737.15		\$1073.91	\$46.07	\$67.12
Crew D-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Bricklayer	\$45.60	\$364.80	\$69.50	\$556.00	\$41.30	\$62.95
1 Bricklayer Helper	37.00	296.00	56.40	451.20		
16 L.H., Daily Totals		\$660.80		\$1007.20	\$41.30	\$62.95
Crew D-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Bricklayers	\$45.60	\$1094.40	\$69.50	\$1668.00	\$42.50	\$64.85
2 Bricklayer Helpers	37.00	592.00	56.40	902.40		
.5 Carpenter	45.85	183.40	70.75	283.00		
44 L.H., Daily Totals		\$1869.80		\$2853.40	\$42.50	\$64.85
Crew D-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Bricklayers	\$45.60	\$1094.40	\$69.50	\$1668.00	\$42.34	\$64.57
2 Bricklayer Helpers	37.00	592.00	56.40	902.40		
.25 Carpenter	45.85	91.70	70.75	141.50		
42 L.H., Daily Totals		\$1778.10		\$2711.90	\$42.34	\$64.57
Crew D-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Bricklayer	\$45.60	\$364.80	\$69.50	\$556.00	\$41.66	\$63.41
2 Bricklayer Helpers	37.00	592.00	56.40	902.40		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Grout Pump, 50 C.F./hr.		134.80		148.28	4.21	4.63
32 L.H., Daily Totals		\$1468.00		\$2177.48	\$45.88	\$68.05
Crew D-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Bricklayer	\$45.60	\$364.80	\$69.50	\$556.00	\$45.60	\$69.50
8 L.H., Daily Totals		\$364.80		\$556.00	\$45.60	\$69.50
Crew D-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Bricklayers	\$45.60	\$1094.40	\$69.50	\$1668.00	\$41.48	\$63.26
3 Bricklayer Helpers	37.00	888.00	56.40	1353.60		
.25 Carpenter	45.85	91.70	70.75	141.50		
50 L.H., Daily Totals		\$2074.10		\$3163.10	\$41.48	\$63.26
Crew D-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Tile Layer	\$41.95	\$335.60	\$61.85	\$494.80	\$37.60	\$55.42
1 Tile Layer Helper	33.25	266.00	49.00	392.00		
16 L.H., Daily Totals		\$601.60		\$886.80	\$37.60	\$55.42
Crew D-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Bricklayers	\$45.60	\$1094.40	\$69.50	\$1668.00	\$42.16	\$64.26
2 Bricklayer Helpers	37.00	592.00	56.40	902.40		
40 L.H., Daily Totals		\$1686.40		\$2570.40	\$42.16	\$64.26

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew D-9						
3 Bricklayers	\$45.60	\$1094.40	\$69.50	\$1668.00	\$41.30	\$62.95
3 Bricklayer Helpers	37.00	888.00	56.40	1353.60		
48 L.H., Daily Totals		\$1982.40		\$3021.60	\$41.30	\$62.95
Crew D-10						
1 Bricklayer Foreman (outside)	\$47.60	\$380.80	\$72.55	\$580.40	\$45.11	\$68.66
1 Bricklayer	45.60	364.80	69.50	556.00		
1 Bricklayer Helper	37.00	296.00	56.40	451.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 S.P. Crane, 4x4, 12 Ton		481.20		529.32	15.04	16.54
32 L.H., Daily Totals		\$1924.80		\$2726.52	\$60.15	\$85.20
Crew D-11						
1 Bricklayer Foreman (outside)	\$47.60	\$380.80	\$72.55	\$580.40	\$43.40	\$66.15
1 Bricklayer	45.60	364.80	69.50	556.00		
1 Bricklayer Helper	37.00	296.00	56.40	451.20		
24 L.H., Daily Totals		\$1041.60		\$1587.60	\$43.40	\$66.15
Crew D-12						
1 Bricklayer Foreman (outside)	\$47.60	\$380.80	\$72.55	\$580.40	\$41.80	\$63.71
1 Bricklayer	45.60	364.80	69.50	556.00		
2 Bricklayer Helpers	37.00	592.00	56.40	902.40		
32 L.H., Daily Totals		\$1337.60		\$2038.80	\$41.80	\$63.71
Crew D-13						
1 Bricklayer Foreman (outside)	\$47.60	\$380.80	\$72.55	\$580.40	\$43.88	\$66.97
1 Bricklayer	45.60	364.80	69.50	556.00		
2 Bricklayer Helpers	37.00	592.00	56.40	902.40		
1 Carpenter	45.85	366.80	70.75	566.00		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 S.P. Crane, 4x4, 12 Ton		481.20		529.32	10.03	11.03
48 L.H., Daily Totals		\$2587.60		\$3743.72	\$53.91	\$77.99
Crew E-1						
1 Welder Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$50.42	\$85.08
1 Welder	51.10	408.80	90.20	721.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Welder, Gas Engine, 300 amp		142.00		156.20	5.92	6.51
24 L.H., Daily Totals		\$1352.00		\$2198.20	\$56.33	\$91.59
Crew E-2						
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$50.19	\$85.24
4 Struc. Steel Workers	51.10	1635.20	90.20	2886.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Lattice Boom Crane, 90 Ton		1529.00		1681.90	27.30	30.03
56 L.H., Daily Totals		\$4339.40		\$6455.50	\$77.49	\$115.28
Crew E-3						
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.77	\$91.37
1 Struc. Steel Worker	51.10	408.80	90.20	721.60		
1 Welder	51.10	408.80	90.20	721.60		
1 Welder, Gas Engine, 300 amp		142.00		156.20	5.92	6.51
24 L.H., Daily Totals		\$1384.40		\$2349.00	\$57.68	\$97.88

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew E-3A						
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.77	\$91.37
1 Struc. Steel Worker	51.10	408.80	90.20	721.60		
1 Welder	51.10	408.80	90.20	721.60		
1 Welder, Gas Engine, 300 amp		142.00		156.20		
1 Aerial Lift Truck, 40' Boom		325.00		357.50	19.46	21.40
24 L.H., Daily Totals		\$1709.40		\$2706.50	\$71.22	\$112.77
Crew E-4						
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.60	\$91.08
3 Struc. Steel Workers	51.10	1226.40	90.20	2164.80		
1 Welder, Gas Engine, 300 amp		142.00		156.20	4.44	4.88
32 L.H., Daily Totals		\$1793.20		\$3070.60	\$56.04	\$95.96
Crew E-5						
2 Struc. Steel Foremen (outside)	\$53.10	\$849.60	\$93.70	\$1499.20	\$50.66	\$87.08
5 Struc. Steel Workers	51.10	2044.00	90.20	3608.00		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Welder	51.10	408.80	90.20	721.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Lattice Boom Crane, 90 Ton		1529.00		1681.90		
1 Welder, Gas Engine, 300 amp		142.00		156.20	20.89	22.98
80 L.H., Daily Totals		\$5723.80		\$8804.50	\$71.55	\$110.06
Crew E-6						
3 Struc. Steel Foremen (outside)	\$53.10	\$1274.40	\$93.70	\$2248.80	\$50.70	\$87.29
9 Struc. Steel Workers	51.10	3679.20	90.20	6494.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Welder	51.10	408.80	90.20	721.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Lattice Boom Crane, 90 Ton		1529.00		1681.90		
1 Welder, Gas Engine, 300 amp		142.00		156.20		
1 Air Compressor, 160 cfm		157.40		173.14		
2 Impact Wrenches		36.00		39.60	14.57	16.02
128 L.H., Daily Totals		\$8353.60		\$13224.04	\$65.26	\$103.31
Crew E-7						
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$50.66	\$87.08
4 Struc. Steel Workers	51.10	1635.20	90.20	2886.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Welder Foreman (outside)	53.10	424.80	93.70	749.60		
2 Welders	51.10	817.60	90.20	1443.20		
1 Lattice Boom Crane, 90 Ton		1529.00		1681.90		
2 Welder, Gas Engine, 300 amp		284.00		312.40	22.66	24.93
80 L.H., Daily Totals		\$5865.80		\$8960.70	\$73.32	\$112.01
Crew E-8						
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$50.45	\$86.35
4 Struc. Steel Workers	51.10	1635.20	90.20	2886.40		
1 Welder Foreman (outside)	53.10	424.80	93.70	749.60		
4 Welders	51.10	1635.20	90.20	2886.40		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Lattice Boom Crane, 90 Ton		1529.00		1681.90		
4 Welder, Gas Engine, 300 amp		568.00		624.80	20.16	22.18
104 L.H., Daily Totals		\$7343.80		\$11287.10	\$70.61	\$108.53

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew E-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Struc. Steel Foremen (outside)	\$53.10	\$849.60	\$93.70	\$1499.20	\$50.70	\$87.29
5 Struc. Steel Workers	51.10	2044.00	90.20	3608.00		
1 Welder Foreman (outside)	53.10	424.80	93.70	749.60		
5 Welders	51.10	2044.00	90.20	3608.00		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Lattice Boom Crane, 90 Ton		1529.00		1681.90		
5 Welder, Gas Engine, 300 amp		710.00		781.00	17.49	19.24
128 L.H., Daily Totals		\$8728.20		\$13636.10	\$68.19	\$106.53
Crew E-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Welder Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$52.10	\$91.95
1 Welder	51.10	408.80	90.20	721.60		
1 Welder, Gas Engine, 300 amp		142.00		156.20		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	29.69	32.66
16 L.H., Daily Totals		\$1308.60		\$1993.70	\$81.79	\$124.61
Crew E-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Painters, Struc. Steel	\$40.50	\$648.00	\$73.05	\$1168.80	\$41.17	\$68.50
1 Building Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Compressor, 250 cfm		202.40		222.64		
1 Sandblaster, Portable, 3 C.F.		20.40		22.44		
1 Set Sand Blasting Accessories		13.85		15.23	7.40	8.13
32 L.H., Daily Totals		\$1554.25		\$2452.32	\$48.57	\$76.63
Crew E-11A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Painters, Struc. Steel	\$40.50	\$648.00	\$73.05	\$1168.80	\$41.17	\$68.50
1 Building Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Compressor, 250 cfm		202.40		222.64		
1 Sandblaster, Portable, 3 C.F.		20.40		22.44		
1 Set Sand Blasting Accessories		13.85		15.23		
1 Aerial Lift Truck, 60' Boom		456.00		501.60	21.65	23.81
32 L.H., Daily Totals		\$2010.25		\$2953.92	\$62.82	\$92.31
Crew E-11B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Painters, Struc. Steel	\$40.50	\$648.00	\$73.05	\$1168.80	\$39.22	\$67.55
1 Building Laborer	36.65	293.20	56.55	452.40		
2 Paint Sprayer, 8 C.F.M.		89.80		98.78		
1 Aerial Lift Truck, 60' Boom		456.00		501.60	22.74	25.02
24 L.H., Daily Totals		\$1487.00		\$2221.58	\$61.96	\$92.57
Crew E-12	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Welder Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$50.08	\$82.53
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Welder, Gas Engine, 300 amp		142.00		156.20	8.88	9.76
16 L.H., Daily Totals		\$943.20		\$1476.60	\$58.95	\$92.29
Crew E-13	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Welder Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.08	\$86.25
5 Equip. Oper. (light)	47.05	188.20	71.35	285.40		
1 Welder, Gas Engine, 300 amp		142.00		156.20	11.83	13.02
12 L.H., Daily Totals		\$755.00		\$1191.20	\$62.92	\$99.27
Crew E-14	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Welder Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$53.10	\$93.70
1 Welder Gas Engine, 300 amp		142.00		156.20	17.75	19.52
8 L.H., Daily Totals		\$566.80		\$905.80	\$70.85	\$113.22

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew E-16	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Welder Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$52.10	\$91.95
1 Welder	51.10	408.80	90.20	721.60		
1 Welder, Gas Engine, 300 amp		142.00		156.20	8.88	9.76
16 L.H., Daily Totals		\$975.60		\$1627.40	\$60.98	\$101.71
Crew E-17	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$52.10	\$91.95
1 Structural Steel Worker	51.10	408.80	90.20	721.60		
16 L.H., Daily Totals		\$833.60		\$1471.20	\$52.10	\$91.95
Crew E-18	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.06	\$87.69
3 Structural Steel Workers	51.10	1226.40	90.20	2164.80		
1 Equipment Operator (med.)	48.90	391.20	74.15	593.20		
1 Lattice Boom Crane, 20 Ton		960.50		1056.55	24.01	26.41
40 L.H., Daily Totals		\$3002.90		\$4564.15	\$75.07	\$114.10
Crew E-19	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$50.42	\$85.08
1 Structural Steel Worker	51.10	408.80	90.20	721.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Lattice Boom Crane, 20 Ton		960.50		1056.55	40.02	44.02
24 L.H., Daily Totals		\$2170.50		\$3098.55	\$90.44	\$129.11
Crew E-20	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$50.30	\$85.86
5 Structural Steel Workers	51.10	2044.00	90.20	3608.00		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Lattice Boom Crane, 40 Ton		1177.00		1294.70	18.39	20.23
64 L.H., Daily Totals		\$4396.20		\$6789.90	\$68.69	\$106.09
Crew E-22	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Skilled Worker Foreman (out)	\$49.30	\$394.40	\$76.35	\$610.80	\$47.97	\$74.28
2 Skilled Workers	47.30	756.80	73.25	1172.00		
24 L.H., Daily Totals		\$1151.20		\$1782.80	\$47.97	\$74.28
Crew E-24	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Structural Steel Workers	\$51.10	\$1226.40	\$90.20	\$2164.80	\$50.55	\$86.19
1 Equipment Operator (med.)	48.90	391.20	74.15	593.20		
1 Hyd. Crane, 25 Ton		745.80		820.38	23.31	25.64
32 L.H., Daily Totals		\$2363.40		\$3578.38	\$73.86	\$111.82
Crew E-25	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Welder Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$53.10	\$93.70
1 Cutting Torch		11.40		12.54	1.43	1.57
8 L.H., Daily Totals		\$436.20		\$762.14	\$54.52	\$95.27
Crew F-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
4 Carpenters	\$45.85	\$1467.20	\$70.75	\$2264.00	\$46.73	\$71.84
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Crane, 12 Ton		663.00		729.30	16.57	18.23
40 L.H., Daily Totals		\$2532.20		\$3602.90	\$63.31	\$90.07
Crew F-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
4 Carpenters	\$45.85	\$1467.20	\$70.75	\$2264.00	\$46.20	\$70.87
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oiler)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 55 Ton		1137.00		1250.70	23.69	26.06
48 L.H., Daily Totals		\$3354.60		\$4652.30	\$69.89	\$96.92

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew F-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$46.35	\$71.53
3 Carpenters	45.85	1100.40	70.75	1698.00		
32 L.H., Daily Totals		\$1483.20		\$2288.80	\$46.35	\$71.53
Crew F-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Carpenters	\$45.85	\$733.60	\$70.75	\$1132.00	\$43.05	\$66.16
2 Building Laborers	36.65	586.40	56.55	904.80		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Crane, 12 Ton		663.00		729.30	16.57	18.23
40 L.H., Daily Totals		\$2385.00		\$3375.70	\$59.63	\$84.39
Crew F-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Carpenters	\$45.85	\$733.60	\$70.75	\$1132.00	\$41.25	\$63.65
2 Building Laborers	36.65	586.40	56.55	904.80		
32 L.H., Daily Totals		\$1320.00		\$2036.80	\$41.25	\$63.65
Crew G-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Roofer Foreman (outside)	\$41.15	\$329.20	\$70.05	\$560.40	\$36.58	\$62.26
4 Roofers Composition	39.15	1252.80	66.65	2132.80		
2 Roofer Helpers	29.15	466.40	49.60	793.60		
1 Application Equipment		199.20		219.12		
1 Tar Kettle/Pot		130.00		143.00		
1 Crew Truck		224.80		247.28	9.89	10.88
56 L.H., Daily Totals		\$2602.40		\$4096.20	\$46.47	\$73.15
Crew G-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Plasterer	\$41.95	\$335.60	\$63.15	\$505.20	\$38.60	\$58.57
1 Plasterer Helper	37.20	297.60	56.00	448.00		
1 Building Laborer	36.65	293.20	56.55	452.40		
1 Grout Pump, 50 C.F./hr.		134.80		148.28	5.62	6.18
24 L.H., Daily Totals		\$1061.20		\$1553.88	\$44.22	\$64.75
Crew G-2A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Roofer Composition	\$39.15	\$313.20	\$66.65	\$533.20	\$34.98	\$57.60
1 Roofer Helper	29.15	233.20	49.60	396.80		
1 Building Laborer	36.65	293.20	56.55	452.40		
1 Foam Spray Rig, Trailer-Mtd.		585.25		643.77		
1 Pickup Truck, 3/4 Ton		157.00		172.70	30.93	34.02
24 L.H., Daily Totals		\$1581.85		\$2198.88	\$65.91	\$91.62
Crew G-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Sheet Metal Workers	\$54.70	\$875.20	\$83.55	\$1336.80	\$45.67	\$70.05
2 Building Laborers	36.65	586.40	56.55	904.80		
32 L.H., Daily Totals		\$1461.60		\$2241.60	\$45.67	\$70.05
Crew G-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$38.65	\$309.20	\$59.65	\$477.20	\$37.32	\$57.58
2 Building Laborers	36.65	586.40	56.55	904.80		
1 Flatbed Truck, Gas, 1.5 Ton		270.20		297.22		
1 Air Compressor, 160 cfm		157.40		173.14	17.82	19.60
24 L.H., Daily Totals		\$1323.20		\$1852.36	\$55.13	\$77.18
Crew G-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Roofer Foreman (outside)	\$41.15	\$329.20	\$70.05	\$560.40	\$35.55	\$60.51
2 Roofers Composition	39.15	626.40	66.65	1066.40		
2 Roofer Helpers	29.15	466.40	49.60	793.60		
1 Application Equipment		199.20		219.12	4.98	5.48
40 L.H., Daily Totals		\$1621.20		\$2639.52	\$40.53	\$65.99

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew G-6A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Roofers Composition	\$39.15	\$626.40	\$66.65	\$1066.40	\$39.15	\$66.65
1 Small Compressor, Electric		12.10		13.31		
2 Pneumatic Nailers		44.70		49.17	3.55	3.90
16 L.H., Daily Totals		\$683.20		\$1128.88	\$42.70	\$70.56
Crew G-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter	\$45.85	\$366.80	\$70.75	\$566.00	\$45.85	\$70.75
1 Small Compressor, Electric		12.10		13.31		
1 Pneumatic Nailer		22.35		24.59	4.31	4.74
8 L.H., Daily Totals		\$401.25		\$603.89	\$50.16	\$75.49
Crew H-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Glaziers	\$44.05	\$704.80	\$67.00	\$1072.00	\$47.58	\$78.60
2 Struc. Steel Workers	51.10	817.60	90.20	1443.20		
32 L.H., Daily Totals		\$1522.40		\$2515.20	\$47.58	\$78.60
Crew H-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Glaziers	\$44.05	\$704.80	\$67.00	\$1072.00	\$41.58	\$63.52
1 Building Laborer	36.65	293.20	56.55	452.40		
24 L.H., Daily Totals		\$998.00		\$1524.40	\$41.58	\$63.52
Crew H-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Glazier	\$44.05	\$352.40	\$67.00	\$536.00	\$39.35	\$60.35
1 Helper	34.65	277.20	53.70	429.60		
16 L.H., Daily Totals		\$629.60		\$965.60	\$39.35	\$60.35
Crew H-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter	\$45.85	\$366.80	\$70.75	\$566.00	\$42.87	\$65.75
1 Carpenter Helper	34.65	277.20	53.70	429.60		
.5 Electrician	53.35	213.40	79.85	319.40		
20 L.H., Daily Totals		\$857.40		\$1315.00	\$42.87	\$65.75
Crew J-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Plasterers	\$41.95	\$1006.80	\$63.15	\$1515.60	\$40.05	\$60.29
2 Plasterer Helpers	37.20	595.20	56.00	896.00		
1 Mixing Machine, 6 C.F.		143.60		157.96	3.59	3.95
40 L.H., Daily Totals		\$1745.60		\$2569.56	\$43.64	\$64.24
Crew J-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Plasterers	\$41.95	\$1006.80	\$63.15	\$1515.60	\$40.14	\$60.19
2 Plasterer Helpers	37.20	595.20	56.00	896.00		
1 Lather	40.60	324.80	59.70	477.60		
1 Mixing Machine, 6 C.F.		143.60		157.96	2.99	3.29
48 L.H., Daily Totals		\$2070.40		\$3047.16	\$43.13	\$63.48
Crew J-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Terrazzo Worker	\$41.65	\$333.20	\$61.40	\$491.20	\$38.23	\$56.35
1 Terrazzo Helper	34.80	278.40	51.30	410.40		
1 Floor Grinder, 22" Path		97.90		107.69		
1 Terrazzo Mixer		192.60		211.86	18.16	19.97
16 L.H., Daily Totals		\$902.10		\$1221.15	\$56.38	\$76.32
Crew J-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Cement Finishers	\$44.05	\$704.80	\$65.10	\$1041.60	\$41.58	\$62.25
1 Laborer	36.65	293.20	56.55	452.40		
1 Floor Grinder, 22" Path		97.90		107.69		
1 Floor Edger, 7" Path		39.15		43.06		
1 Vacuum Pick-Up System		60.75		66.83	8.24	9.07
24 L.H., Daily Totals		\$1195.80		\$1711.58	\$49.83	\$71.32

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew J-4A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Cement Finishers	\$44.05	\$704.80	\$65.10	\$1041.60	\$40.35	\$60.83
2 Laborers	36.65	586.40	56.55	904.80		
1 Floor Grinder, 22" Path		97.90		107.69		
1 Floor Edger 7" Path		39.15		43.06		
1 Vacuum Pick-Up System		60.75		66.83		
1 Floor Auto Scrubber		212.15		233.37	12.81	14.09
32 L.H., Daily Totals		\$1701.15		\$2397.34	\$53.16	\$74.92
Crew J-4B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$36.65	\$293.20	\$56.55	\$452.40	\$36.65	\$56.55
1 Floor Auto Scrubber		212.15		233.37	26.52	29.17
8 L.H., Daily Totals		\$505.35		\$685.76	\$63.17	\$85.72
Crew J-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Painters	\$39.55	\$632.80	\$59.50	\$952.00	\$40.70	\$61.73
1 Building Laborer	36.65	293.20	56.55	452.40		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Air Compressor, 250 cfm		202.40		222.64		
1 Sandblaster, Portable, 3 C.F.		20.40		22.44		
1 Set Sand Blasting Accessories		13.85		15.23	7.40	8.13
32 L.H., Daily Totals		\$1539.05		\$2235.51	\$48.10	\$69.86
Crew J-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Painters	\$39.55	\$632.80	\$59.50	\$952.00	\$39.55	\$59.50
1 Floor Belt Sander		15.90		17.49		
1 Floor Sanding Edger		15.55		17.11	1.97	2.16
16 L.H., Daily Totals		\$664.25		\$986.60	\$41.52	\$61.66
Crew K-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter	\$45.85	\$366.80	\$70.75	\$566.00	\$41.17	\$63.23
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	20.81	22.89
16 L.H., Daily Totals		\$991.80		\$1377.90	\$61.99	\$86.12
Crew K-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$46.90	\$79.87
1 Struc. Steel Worker	51.10	408.80	90.20	721.60		
1 Truck Driver (light)	36.50	292.00	55.70	445.60		
1 Flatbed Truck, Gas, 3 Ton		333.00		366.30	13.88	15.26
24 L.H., Daily Totals		\$1458.60		\$2283.10	\$60.77	\$95.13
Crew L-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician	\$53.35	\$426.80	\$79.85	\$638.80	\$55.45	\$83.38
1 Plumber	57.55	460.40	86.90	695.20		
16 L.H., Daily Totals		\$887.20		\$1334.00	\$55.45	\$83.38
Crew L-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter	\$45.85	\$366.80	\$70.75	\$566.00	\$40.25	\$62.23
1 Carpenter Helper	34.65	277.20	53.70	429.60		
16 L.H., Daily Totals		\$644.00		\$995.60	\$40.25	\$62.23
Crew L-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter	\$45.85	\$366.80	\$70.75	\$566.00	\$49.94	\$76.22
5 Electrician	53.35	213.40	79.85	319.40		
5 Sheet Metal Worker	54.70	218.80	83.55	334.20		
16 L.H., Daily Totals		\$799.00		\$1219.60	\$49.94	\$76.22

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew L-3A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$47.85	\$382.80	\$73.85	\$590.80	\$50.13	\$77.08
.5 Sheet Metal Worker	54.70	218.80	83.55	334.20		
12 L.H., Daily Totals		\$601.60		\$925.00	\$50.13	\$77.08
Crew L-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Workers	\$47.30	\$756.80	\$73.25	\$1172.00	\$43.08	\$66.73
1 Helper	34.65	277.20	53.70	429.60		
24 L.H., Daily Totals		\$1034.00		\$1601.60	\$43.08	\$66.73
Crew L-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.26	\$88.70
5 Struc. Steel Workers	51.10	2044.00	90.20	3608.00		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Crane, 25 Ton		745.80		820.38	13.32	14.65
56 L.H., Daily Totals		\$3616.60		\$5787.58	\$64.58	\$103.35
Crew L-5A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.39	\$87.58
2 Structural Steel Workers	51.10	817.60	90.20	1443.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 S.P. Crane, 4x4, 25 Ton		607.20		667.92	18.98	20.87
32 L.H., Daily Totals		\$2251.60		\$3470.32	\$70.36	\$108.45
Crew L-5B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$52.53	\$83.63
2 Structural Steel Workers	51.10	817.60	90.20	1443.20		
2 Electricians	53.35	853.60	79.85	1277.60		
2 Steamfitters/Pipefitters	58.50	936.00	88.35	1413.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (oilier)	43.55	348.40	66.00	528.00		
1 Hyd. Crane, 80 Ton		1652.00		1817.20	22.94	25.24
72 L.H., Daily Totals		\$5434.40		\$7838.80	\$75.48	\$108.87
Crew L-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Plumber	\$57.55	\$460.40	\$86.90	\$695.20	\$56.15	\$84.55
.5 Electrician	53.35	213.40	79.85	319.40		
12 L.H., Daily Totals		\$673.80		\$1014.60	\$56.15	\$84.55
Crew L-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Carpenters	\$45.85	\$733.60	\$70.75	\$1132.00	\$44.29	\$67.99
1 Building Laborer	36.65	293.20	56.55	452.40		
.5 Electrician	53.35	213.40	79.85	319.40		
28 L.H., Daily Totals		\$1240.20		\$1903.80	\$44.29	\$67.99
Crew L-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Carpenters	\$45.85	\$733.60	\$70.75	\$1132.00	\$48.19	\$73.98
.5 Plumber	57.55	230.20	86.90	347.60		
20 L.H., Daily Totals		\$963.80		\$1479.60	\$48.19	\$73.98
Crew L-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (inside)	\$37.15	\$297.20	\$57.30	\$458.40	\$41.83	\$66.78
2 Building Laborers	36.65	586.40	56.55	904.80		
1 Struc. Steel Worker	51.10	408.80	90.20	721.60		
.5 Electrician	53.35	213.40	79.85	319.40		
36 L.H., Daily Totals		\$1505.80		\$2404.20	\$41.83	\$66.78

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew L-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.48	\$86.70
1 Structural Steel Worker	51.10	408.80	90.20	721.60		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Hyd. Crane, 12 Ton		663.00		729.30	27.63	30.39
24 L.H., Daily Totals		\$1898.60		\$2810.10	\$79.11	\$117.09
Crew L-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Wreckers	\$36.65	\$586.40	\$61.60	\$985.60	\$42.65	\$67.69
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Equip. Oper. (light)	47.05	376.40	71.35	570.80		
1 Hyd. Excavator, 2.5 C.Y.		1637.00		1800.70		
1 Loader, Skid Steer, 78 H.P.		308.80		339.68	60.81	66.89
32 L.H., Daily Totals		\$3310.60		\$4306.38	\$103.46	\$134.57
Crew M-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Elevator Constructors	\$74.15	\$1779.60	\$110.95	\$2662.80	\$70.44	\$105.39
1 Elevator Apprentice	59.30	474.40	88.70	709.60		
5 Hand Tools		48.00		52.80	1.50	1.65
32 L.H., Daily Totals		\$2302.00		\$3425.20	\$71.94	\$107.04
Crew M-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman (outside)	\$55.35	\$442.80	\$82.85	\$662.80	\$55.92	\$84.14
1 Common Laborer	36.65	293.20	56.55	452.40		
.25 Equipment Operator (med.)	48.90	97.80	74.15	148.30		
1 Elevator Constructor	74.15	593.20	110.95	887.60		
1 Elevator Apprentice	59.30	474.40	88.70	709.60		
.25 S.P. Crane, 4x4, 20 Ton		140.10		154.11	4.12	4.53
34 L.H., Daily Totals		\$2041.50		\$3014.81	\$60.04	\$88.67
Crew M-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman (outside)	\$55.35	\$442.80	\$82.85	\$662.80	\$55.31	\$83.24
1 Common Laborer	36.65	293.20	56.55	452.40		
.25 Equipment Operator, Crane	50.25	100.50	76.20	152.40		
.25 Equip. Oper. (oilier)	43.55	87.10	66.00	132.00		
1 Elevator Constructor	74.15	593.20	110.95	887.60		
1 Elevator Apprentice	59.30	474.40	88.70	709.60		
.25 S.P. Crane, 4x4, 40 Ton		178.25		196.07	4.95	5.45
36 L.H., Daily Totals		\$2169.45		\$3192.88	\$60.26	\$88.69
Crew Q-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Plumber	\$57.55	\$460.40	\$86.90	\$695.20	\$51.80	\$78.22
1 Plumber Apprentice	46.05	368.40	69.55	556.40		
16 L.H., Daily Totals		\$828.80		\$1251.60	\$51.80	\$78.22
Crew Q-1A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
.25 Plumber Foreman (outside)	\$59.55	\$119.10	\$89.90	\$179.80	\$57.95	\$87.50
1 Plumber	57.55	460.40	86.90	695.20		
10 L.H., Daily Totals		\$579.50		\$875.00	\$57.95	\$87.50
Crew Q-1C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Plumber	\$57.55	\$460.40	\$86.90	\$695.20	\$50.83	\$76.87
1 Plumber Apprentice	46.05	368.40	69.55	556.40		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Trencher, Chain Type, 8' D		3376.00		3713.60	140.67	154.73
24 L.H., Daily Totals		\$4596.00		\$5558.40	\$191.50	\$231.60
Crew Q-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Plumbers	\$57.55	\$920.80	\$86.90	\$1390.40	\$53.72	\$81.12
1 Plumber Apprentice	46.05	368.40	69.55	556.40		
24 L.H., Daily Totals		\$1289.20		\$1946.80	\$53.72	\$81.12

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew Q-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Plumber Foreman (inside)	\$58.05	\$464.40	\$87.65	\$701.20	\$54.80	\$82.75
2 Plumbers	57.55	920.80	86.90	1390.40		
1 Plumber Apprentice	46.05	368.40	69.55	556.40		
32 L.H., Daily Totals		\$1753.60		\$2648.00	\$54.80	\$82.75
Crew Q-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Plumber Foreman (inside)	\$58.05	\$464.40	\$87.65	\$701.20	\$54.80	\$82.75
1 Plumber	57.55	460.40	86.90	695.20		
1 Welder (plumber)	57.55	460.40	86.90	695.20		
1 Plumber Apprentice	46.05	368.40	69.55	556.40		
1 Welder, Electric, 300 amp		55.30		60.83	1.73	1.90
32 L.H., Daily Totals		\$1808.90		\$2708.83	\$56.53	\$84.65
Crew Q-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Steamfitter	\$58.50	\$468.00	\$88.35	\$706.80	\$52.65	\$79.50
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20		
16 L.H., Daily Totals		\$842.40		\$1272.00	\$52.65	\$79.50
Crew Q-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Steamfitters	\$58.50	\$936.00	\$88.35	\$1413.60	\$54.60	\$82.45
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20		
24 L.H., Daily Totals		\$1310.40		\$1978.80	\$54.60	\$82.45
Crew Q-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Steamfitter Foreman (inside)	\$59.00	\$472.00	\$89.10	\$712.80	\$55.70	\$84.11
2 Steamfitters	58.50	936.00	88.35	1413.60		
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20		
32 L.H., Daily Totals		\$1782.40		\$2691.60	\$55.70	\$84.11
Crew Q-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Steamfitter Foreman (inside)	\$59.00	\$472.00	\$89.10	\$712.80	\$55.70	\$84.11
1 Steamfitter	58.50	468.00	88.35	706.80		
1 Welder (steamfitter)	58.50	468.00	88.35	706.80		
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20		
1 Welder, Electric, 300 amp		55.30		60.83	1.73	1.90
32 L.H., Daily Totals		\$1837.70		\$2752.43	\$57.43	\$86.01
Crew Q-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Sheet Metal Worker	\$54.70	\$437.60	\$83.55	\$668.40	\$49.23	\$75.17
1 Sheet Metal Apprentice	43.75	350.00	66.80	534.40		
16 L.H., Daily Totals		\$787.60		\$1202.80	\$49.23	\$75.17
Crew Q-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Sheet Metal Workers	\$54.70	\$875.20	\$83.55	\$1336.80	\$51.05	\$77.97
1 Sheet Metal Apprentice	43.75	350.00	66.80	534.40		
24 L.H., Daily Totals		\$1225.20		\$1871.20	\$51.05	\$77.97
Crew Q-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Sheet Metal Foreman (inside)	\$55.20	\$441.60	\$84.30	\$674.40	\$52.09	\$79.55
2 Sheet Metal Workers	54.70	875.20	83.55	1336.80		
1 Sheet Metal Apprentice	43.75	350.00	66.80	534.40		
32 L.H., Daily Totals		\$1666.80		\$2545.60	\$52.09	\$79.55
Crew Q-12	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Sprinkler Installer	\$55.40	\$443.20	\$83.70	\$669.60	\$49.85	\$75.33
1 Sprinkler Apprentice	44.30	354.40	66.95	535.60		
16 L.H., Daily Totals		\$797.60		\$1205.20	\$49.85	\$75.33

Crew No.	Bare Costs		Incl. Subs O&P	Cost Per Labor-Hour	
Crew Q-13	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Sprinkler Foreman (inside)	\$55.90	\$447.20	\$84.45	\$675.60	\$52.75 \$79.70
2 Sprinkler Installers	55.40	886.40	83.70	1339.20	
1 Sprinkler Apprentice	44.30	354.40	66.95	535.60	
32 L.H., Daily Totals		\$1688.00		\$2550.40	\$52.75 \$79.70
Crew Q-14	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Asbestos Worker	\$51.15	\$409.20	\$79.60	\$636.80	\$46.02 \$71.63
1 Asbestos Apprentice	40.90	327.20	63.65	509.20	
16 L.H., Daily Totals		\$736.40		\$1146.00	\$46.02 \$71.63
Crew Q-15	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Plumber	\$57.55	\$460.40	\$86.90	\$695.20	\$51.80 \$78.22
1 Plumber Apprentice	46.05	368.40	69.55	556.40	
1 Welder, Electric, 300 amp		55.30		60.83	3.46 3.80
16 L.H., Daily Totals		\$884.10		\$1312.43	\$55.26 \$82.03
Crew Q-16	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
2 Plumbers	\$57.55	\$920.80	\$86.90	\$1390.40	\$53.72 \$81.12
1 Plumber Apprentice	46.05	368.40	69.55	556.40	
1 Welder, Electric, 300 amp		55.30		60.83	2.30 2.53
24 L.H., Daily Totals		\$1344.50		\$2007.63	\$56.02 \$83.65
Crew Q-17	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Steamfitter	\$58.50	\$468.00	\$88.35	\$706.80	\$52.65 \$79.50
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20	
1 Welder, Electric, 300 amp		55.30		60.83	3.46 3.80
16 L.H., Daily Totals		\$897.70		\$1332.83	\$56.11 \$83.30
Crew Q-17A	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Steamfitter	\$58.50	\$468.00	\$88.35	\$706.80	\$51.85 \$78.40
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20	
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60	
1 Hyd. Crane, 12 Ton		663.00		729.30	
1 Welder, Electric, 300 amp		55.30		60.83	29.93 32.92
24 L.H., Daily Totals		\$1962.70		\$2671.73	\$81.78 \$111.32
Crew Q-18	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
2 Steamfitters	\$58.50	\$936.00	\$88.35	\$1413.60	\$54.60 \$82.45
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20	
1 Welder, Electric, 300 amp		55.30		60.83	2.30 2.53
24 L.H., Daily Totals		\$1365.70		\$2039.63	\$56.90 \$84.98
Crew Q-19	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Steamfitter	\$58.50	\$468.00	\$88.35	\$706.80	\$52.88 \$79.62
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20	
1 Electrician	53.35	426.80	79.85	638.80	
24 L.H., Daily Totals		\$1269.20		\$1910.80	\$52.88 \$79.62
Crew Q-20	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Sheet Metal Worker	\$54.70	\$437.60	\$83.55	\$668.40	\$50.05 \$76.11
1 Sheet Metal Apprentice	43.75	350.00	66.80	534.40	
5 Electrician	53.35	213.40	79.85	319.40	
20 L.H., Daily Totals		\$1001.00		\$1522.20	\$50.05 \$76.11
Crew Q-21	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
2 Steamfitters	\$58.50	\$936.00	\$88.35	\$1413.60	\$54.29 \$81.80
1 Steamfitter Apprentice	46.80	374.40	70.65	565.20	
1 Electrician	53.35	426.80	79.85	638.80	
32 L.H., Daily Totals		\$1737.20		\$2617.60	\$54.29 \$81.80

Crew No.	Bare Costs		Incl. Subs O&P	Cost Per Labor-Hour	
Crew Q-22	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Plumber	\$57.55	\$460.40	\$86.90	\$695.20	\$51.80 \$78.22
1 Plumber Apprentice	46.05	368.40	69.55	556.40	
1 Hyd. Crane, 12 Ton		663.00		729.30	41.44 45.58
16 L.H., Daily Totals		\$1491.80		\$1980.90	\$93.24 \$123.81
Crew Q-22A	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Plumber	\$57.55	\$460.40	\$86.90	\$695.20	\$47.63 \$72.30
1 Plumber Apprentice	46.05	368.40	69.55	556.40	
1 Laborer	36.65	293.20	56.55	452.40	
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60	
1 Hyd. Crane, 12 Ton		663.00		729.30	20.72 22.79
32 L.H., Daily Totals		\$2187.00		\$3042.90	\$68.34 \$95.09
Crew Q-23	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Plumber Foreman (outside)	\$59.55	\$476.40	\$89.90	\$719.20	\$55.33 \$83.65
1 Plumber	57.55	460.40	86.90	695.20	
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20	
1 Lattice Boom Crane, 20 Ton		960.50		1056.55	40.02 44.02
24 L.H., Daily Totals		\$2288.50		\$3064.15	\$95.35 \$127.67
Crew R-1	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$47.20 \$71.26
3 Electricians	53.35	1280.40	79.85	1916.40	
2 Helpers	34.65	554.40	53.70	859.20	
48 L.H., Daily Totals		\$2265.60		\$3420.40	\$47.20 \$71.26
Crew R-1A	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Electrician	\$53.35	\$426.80	\$79.85	\$638.80	\$44.00 \$66.78
1 Helper	34.65	277.20	53.70	429.60	
16 L.H., Daily Totals		\$704.00		\$1068.40	\$44.00 \$66.78
Crew R-2	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$47.64 \$71.96
3 Electricians	53.35	1280.40	79.85	1916.40	
2 Helpers	34.65	554.40	53.70	859.20	
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60	
1 S.P. Crane, 4x4, 5 Ton		280.00		308.00	5.00 5.50
56 L.H., Daily Totals		\$2947.60		\$4338.00	\$52.64 \$77.46
Crew R-3	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$52.93 \$79.42
1 Electrician	53.35	426.80	79.85	638.80	
.5 Equip. Oper. (crane)	50.25	201.00	76.20	304.80	
.5 S.P. Crane, 4x4, 5 Ton		140.00		154.00	7.00 7.70
20 L.H., Daily Totals		\$1198.60		\$1742.40	\$59.93 \$87.12
Crew R-4	Hr.	Daily	Hr.	Daily	Bare Costs Incl. O&P
1 Struc. Steel Foreman (outside)	\$53.10	\$424.80	\$93.70	\$749.60	\$51.95 \$88.83
3 Struc. Steel Workers	51.10	1226.40	90.20	2164.80	
1 Electrician	53.35	426.80	79.85	638.80	
1 Welder, Gas Engine, 300 amp		142.00		156.20	3.55 3.90
40 L.H., Daily Totals		\$2220.00		\$3709.40	\$55.50 \$92.73

Crew No.	Bare Costs		Incl.		Cost	
			Subs O&P		Per Labor-Hour	
Crew R-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$46.60	\$70.41
4 Electrician Linemen	53.35	1707.20	79.85	2555.20		
2 Electrician Operators	53.35	853.60	79.85	1277.60		
4 Electrician Groundmen	34.65	1108.80	53.70	1718.40		
1 Crew Truck		224.80		247.28		
1 Flatbed Truck, 20,000 GVW		253.40		278.74		
1 Pickup Truck, 3/4 Ton		157.00		172.70		
.2 Hyd. Crane, 55 Ton		227.40		250.14		
.2 Hyd. Crane, 12 Ton		132.60		145.86		
.2 Earth Auger, Truck-Mtd.		85.00		93.50		
1 Tractor w/Winch		434.60		478.06		
88 L.H., Daily Totals		\$5615.20		\$7862.28	17.21	18.93
					\$63.81	\$89.34
Crew R-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$46.60	\$70.41
4 Electrician Linemen	53.35	1707.20	79.85	2555.20		
2 Electrician Operators	53.35	853.60	79.85	1277.60		
4 Electrician Groundmen	34.65	1108.80	53.70	1718.40		
1 Crew Truck		224.80		247.28		
1 Flatbed Truck, 20,000 GVW		253.40		278.74		
1 Pickup Truck, 3/4 Ton		157.00		172.70		
.2 Hyd. Crane, 55 Ton		227.40		250.14		
.2 Hyd. Crane, 12 Ton		132.60		145.86		
.2 Earth Auger, Truck-Mtd.		85.00		93.50		
1 Tractor w/Winch		434.60		478.06		
3 Cable Trailers		586.80		645.48		
.5 Tensioning Rig		194.55		214.01		
.5 Cable Pulling Rig		1136.50		1250.15	39.01	42.91
88 L.H., Daily Totals		\$7533.05		\$9971.92	\$85.60	\$113.32
Crew R-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$37.85	\$58.18
5 Electrician Groundmen	34.65	1386.00	53.70	2148.00		
1 Crew Truck		224.80		247.28		
48 L.H., Daily Totals		\$2041.60		\$3040.08	\$42.53	\$63.34
Crew R-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$47.20	\$71.26
3 Electrician Linemen	53.35	1280.40	79.85	1916.40		
2 Electrician Groundmen	34.65	554.40	53.70	859.20		
1 Pickup Truck, 3/4 Ton		157.00		172.70		
1 Crew Truck		224.80		247.28		
48 L.H., Daily Totals		\$2647.40		\$3840.38	\$55.15	\$80.01
Crew R-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$44.06	\$66.87
1 Electrician Lineman	53.35	426.80	79.85	638.80		
2 Electrician Operators	53.35	853.60	79.85	1277.60		
4 Electrician Groundmen	34.65	1108.80	53.70	1718.40		
1 Pickup Truck, 3/4 Ton		157.00		172.70		
1 Crew Truck		224.80		247.28	5.97	6.56
64 L.H., Daily Totals		\$3201.80		\$4699.58	\$50.03	\$73.43
Crew R-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$50.32	\$75.62
4 Electrician Linemen	53.35	1707.20	79.85	2555.20		
1 Electrician Groundman	34.65	277.20	53.70	429.60		
1 Crew Truck		224.80		247.28		
3 Tram Cars		399.45		439.39	13.01	14.31
48 L.H., Daily Totals		\$3039.45		\$4316.27	\$63.32	\$89.92

Crew No.	Bare Costs		Incl.		Cost	
			Subs O&P		Per Labor-Hour	
Crew R-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$50.59	\$76.11
4 Electricians	53.35	1707.20	79.85	2555.20		
1 Equip. Oper. (crane)	50.25	402.00	76.20	609.60		
1 Common Laborer	36.65	293.20	56.55	452.40		
1 Crew Truck		224.80		247.28		
1 Hyd. Crane, 12 Ton		663.00		729.30	15.85	17.44
56 L.H., Daily Totals		\$3721.00		\$5238.58	\$66.45	\$93.55
Crew R-12	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (inside)	\$46.35	\$370.80	\$71.50	\$572.00	\$43.30	\$67.73
4 Carpenters	45.85	1467.20	70.75	2264.00		
4 Common Laborers	36.65	1172.80	56.55	1809.60		
1 Equip. Oper. (medium)	48.90	391.20	74.15	593.20		
1 Steel Worker	51.10	408.80	90.20	721.60		
1 Dozer, 200 H.P.		1325.00		1457.50		
1 Pickup Truck, 3/4 Ton		157.00		172.70	16.84	18.52
88 L.H., Daily Totals		\$5292.80		\$7590.60	\$60.15	\$86.26
Crew R-13	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$51.43	\$77.18
3 Electricians	53.35	1280.40	79.85	1916.40		
.25 Equip. Oper. (crane)	50.25	100.50	76.20	152.40		
1 Equipment Oiler	43.55	348.40	66.00	528.00		
.25 Hydraulic Crane, 33 Ton		189.80		208.78	4.52	4.97
42 L.H., Daily Totals		\$2349.90		\$3450.38	\$55.95	\$82.15
Crew R-15	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$52.38	\$78.56
4 Electricians	53.35	1707.20	79.85	2555.20		
1 Equipment Oper. (light)	47.05	376.40	71.35	570.80		
1 Aerial Lift Truck, 40' Boom		325.00		357.50	6.77	7.45
48 L.H., Daily Totals		\$2839.40		\$4128.30	\$59.15	\$86.01
Crew R-18	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
.25 Electrician Foreman	\$53.85	\$107.70	\$80.60	\$161.20	\$41.88	\$63.82
1 Electrician	53.35	426.80	79.85	638.80		
2 Helpers	34.65	554.40	53.70	859.20		
26 L.H., Daily Totals		\$1088.90		\$1659.20	\$41.88	\$63.82
Crew R-19	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
.5 Electrician Foreman	\$53.85	\$215.40	\$80.60	\$322.40	\$53.45	\$80.00
2 Electricians	53.35	853.60	79.85	1277.60		
20 L.H., Daily Totals		\$1069.00		\$1600.00	\$53.45	\$80.00
Crew R-21	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician Foreman	\$53.85	\$430.80	\$80.60	\$644.80	\$53.36	\$79.89
3 Electricians	53.35	1280.40	79.85	1916.40		
.1 Equip. Oper. (medium)	48.90	39.12	74.15	59.32		
.1 S.P. Crane, 4x4, 25 Ton		60.72		66.79	1.85	2.04
32.8 L.H., Daily Totals		\$1811.04		\$2687.31	\$55.21	\$81.93
Crew R-22	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
.66 Electrician Foreman	\$53.85	\$284.33	\$80.60	\$425.57	\$45.40	\$68.73
2 Electricians	53.35	853.60	79.85	1277.60		
2 Helpers	34.65	554.40	53.70	859.20		
37.28 L.H., Daily Totals		\$1692.33		\$2562.37	\$45.40	\$68.73

Crew No.	Bare Costs		Incl. Subs O & P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew R-30						
25 Electrician Foreman (outside)	\$55.35	\$110.70	\$82.85	\$165.70	\$43.23	\$65.74
1 Electrician	53.35	426.80	79.85	638.80		
2 Laborers, (Semi-Skilled)	36.65	586.40	56.55	904.80		
26 L.H., Daily Totals		\$1123.90		\$1709.30	\$43.23	\$65.74
Crew R-31						
1 Electrician	\$53.35	\$426.80	\$79.85	\$638.80	\$53.35	\$79.85
1 Core Drill, Electric, 2.5 H.P.		46.20		50.82	5.78	6.35
8 L.H., Daily Totals		\$473.00		\$689.62	\$59.13	\$86.20
Crew W-41E						
.5 Plumber Foreman (outside)	\$59.55	\$238.20	\$89.90	\$359.60	\$49.59	\$75.36
1 Plumber	57.55	460.40	86.90	695.20		
1 Laborer	36.65	293.20	56.55	452.40		
20 L.H., Daily Totals		\$991.80		\$1507.20	\$49.59	\$75.36

Historical Cost Indexes

The table below lists both the RSMeans® historical cost index based on Jan. 1, 1993 = 100 as well as the computed value of an index based on Jan. 1, 2014 costs. Since the Jan. 1, 2014 figure is estimated, space is left to write in the actual index figures as they become available through either the quarterly RSMeans Construction Cost Indexes or as printed in

the Engineering News-Record. To compute the actual index based on Jan. 1, 2014 = 100, divide the historical cost index for a particular year by the actual Jan. 1, 2014 construction cost index. Space has been left to advance the index figures as the year progresses.

Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2014 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2014 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2014 = 100	
	Est.	Actual	Est.	Actual		Actual	Est.	Actual		Actual	Est.	Actual		
Oct 2014*					July 1999	117.6	58.0		July 1981	70.0	34.5			
July 2014*					1998	115.1	56.8		1980	62.9	31.0			
April 2014*					1997	112.8	55.6		1979	57.8	28.5			
Jan 2014*	202.7		100.0	100.0	1996	110.2	54.4		1978	53.5	26.4			
July 2013		201.2	99.3		1995	107.6	53.1		1977	49.5	24.4			
2012		194.6	96.0		1994	104.4	51.5		1976	46.9	23.1			
2011		191.2	94.3		1993	101.7	50.2		1975	44.8	22.1			
2010		183.5	90.5		1992	99.4	49.1		1974	41.4	20.4			
2009		180.1	88.9		1991	96.8	47.8		1973	37.7	18.6			
2008		180.4	89.0		1990	94.3	46.5		1972	34.8	17.2			
2007		169.4	83.6		1989	92.1	45.5		1971	32.1	15.8			
2006		162.0	79.9		1988	89.9	44.3		1970	28.7	14.2			
2005		151.6	74.8		1987	87.7	43.3		1969	26.9	13.3			
2004		143.7	70.9		1986	84.2	41.6		1968	24.9	12.3			
2003		132.0	65.1		1985	82.6	40.8		1967	23.5	11.6			
2002		128.7	63.5		1984	82.0	40.4		1966	22.7	11.2			
2001		125.1	61.7		1983	80.2	39.5		1965	21.7	10.7			
▼ 2000		120.9	59.6		▼ 1982	76.1	37.6		▼ 1964	21.2	10.5			

Adjustments to Costs

The "Historical Cost Index" can be used to convert national average building costs at a particular time to the approximate building costs for some other time.

Example:

Estimate and compare construction costs for different years in the same city.

To estimate the national average construction cost of a building in 1970, knowing that it cost \$900,000 in 2014:

INDEX in 1970 = 28.7

INDEX in 2014 = 202.7

Time Adjustment Using the Historical Cost Indexes:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

$$\frac{\text{INDEX 1970}}{\text{INDEX 2014}} \times \text{Cost 2014} = \text{Cost 1970}$$
$$\frac{28.7}{202.7} \times \$900,000 = .142 \times \$900,000 = \$128,000$$

The construction cost of the building in 1970 is \$128,000.

Note: The city cost indexes for Canada can be used to convert U.S. national averages to local costs in Canadian dollars.

*Historical Cost Index updates and other resources are provided on the following website.
<http://www.reedconstructiondata.com/rsmeans/chgnotice/456321>

How to Use the City Cost Indexes

What you should know before you begin

RSMeans City Cost Indexes (CCI) are an extremely useful tool to use when you want to compare costs from city to city and region to region.

This publication contains average construction cost indexes for 731 U.S. and Canadian cities covering over 930 three-digit zip code locations, as listed directly under each city.

Keep in mind that a City Cost Index number is a percentage ratio of a specific city's cost to the national average cost of the same item at a stated time period.

In other words, these index figures represent relative construction factors (or, if you prefer, multipliers) for Material and Installation costs, as well as the weighted average for Total In Place costs for each CSI MasterFormat division. Installation costs include both labor and equipment rental costs. When estimating equipment rental rates only, for a specific location, use 01 54 33 EQUIPMENT RENTAL COSTS in the Reference Section at the back of the book.

The 30 City Average Index is the average of 30 major U.S. cities and serves as a National Average.

Index figures for both material and installation are based on the 30 major city average of 100 and represent the cost relationship as of July 1, 2013. The index for each division is computed from representative material and labor quantities for that division. The weighted average for each city is a weighted total of the components listed above it, but does not include relative productivity between trades or cities.

As changes occur in local material prices, labor rates, and equipment rental rates (including fuel costs), the impact of these changes should be accurately measured by the change in the City Cost Index for each particular city (as compared to the 30 City Average).

Therefore, if you know (or have estimated) building costs in one city today, you can easily convert those costs to expected building costs in another city.

In addition, by using the Historical Cost Index, you can easily convert National Average building costs at a particular time to the approximate building costs for some other time. The City Cost Indexes can then be applied to calculate the costs for a particular city.

Quick Calculations

Location Adjustment Using the City Cost Indexes:

$$\frac{\text{Index for City A}}{\text{Index for City B}} \times \text{Cost in City B} = \text{Cost in City A}$$

Time Adjustment for the National Average Using the Historical Cost Index:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

Adjustment from the National Average:

$$\frac{\text{Index for City A}}{100} \times \text{National Average Cost} = \text{Cost in City A}$$

Since each of the other RSMeans publications contains many different items, any *one* item multiplied by the particular city index may give incorrect results. However, the larger the number of items compiled, the closer the results should be to actual costs for that particular city.

The City Cost Indexes for Canadian cities are calculated using Canadian material and equipment prices and labor rates, in Canadian dollars. Therefore, indexes for Canadian cities can be used to convert U.S. National Average prices to local costs in Canadian dollars.

How to use this section

1. Compare costs from city to city.

In using the RSMeans Indexes, remember that an index number is not a fixed number but a ratio: It's a percentage ratio of a building component's cost at any stated time to the National Average cost of that same component at the same time period. Put in the form of an equation:

$$\frac{\text{Specific City Cost}}{\text{National Average Cost}} \times 100 = \text{City Index Number}$$

Therefore, when making cost comparisons between cities, do not subtract one city's index number from the index number of another city and read the result as a percentage difference. Instead, divide one city's index number by that of the other city. The resulting number may then be used as a multiplier to calculate cost differences from city to city.

The formula used to find cost differences between cities for the purpose of comparison is as follows:

$$\frac{\text{City A Index}}{\text{City B Index}} \times \text{City B Cost (Known)} = \text{City A Cost (Unknown)}$$

In addition, you can use RSMeans CCI to calculate and compare costs division by division between cities using the same basic formula. (Just be sure that you're comparing similar divisions.)

2. Compare a specific city's construction costs with the National Average.

When you're studying construction location feasibility, it's advisable to compare a prospective project's cost index with an index of the National Average cost.

For example, divide the weighted average index of construction costs of a specific city by that of the 30 City Average, which = 100.

$$\frac{\text{City Index}}{100} = \% \text{ of National Average}$$

As a result, you get a ratio that indicates the relative cost of construction in that city in comparison with the National Average.

3. Convert U.S. National Average to actual costs in Canadian City.

$$\frac{\text{Index for Canadian City}}{100} \times \text{National Average Cost} = \text{Cost in Canadian City in \$ CAN}$$

4. **Adjust construction cost data based on a National Average.**

When you use a source of construction cost data which is based on a National Average (such as RSMeans cost data publications), it is necessary to adjust those costs to a specific location.

$$\frac{\text{City Index}}{100} \times \text{"Book" Cost Based on National Average Costs} = \text{City Cost (Unknown)}$$

5. **When applying the City Cost Indexes to demolition projects, use the appropriate division installation index.** For example, for removal of existing doors and windows, use Division 8 (Openings) index.

What you might like to know about how we developed the Indexes

The information presented in the CCI is organized according to the Construction Specifications Institute (CSI) MasterFormat 2012 classification system.

To create a reliable index, RSMeans researched the building type most often constructed in the United States and Canada. Because it was concluded that no one type of building completely represented the building construction industry, nine different types of buildings were combined to create a composite model.

The exact material, labor, and equipment quantities are based on detailed analyses of these nine building types, and then each quantity is weighted in proportion to expected usage. These various material items, labor hours, and equipment rental rates are thus combined to form a composite building representing as closely as possible the actual usage of materials, labor, and equipment used in the North American building construction industry.

The following structures were chosen to make up that composite model:

- 1. Factory, 1 story
- 2. Office, 2-4 story
- 3. Store, Retail
- 4. Town Hall, 2-3 story
- 5. High School, 2-3 story
- 6. Hospital, 4-8 story
- 7. Garage, Parking
- 8. Apartment, 1-3 story
- 9. Hotel/Motel, 2-3 story

For the purposes of ensuring the timeliness of the data, the components of the index for the composite model have been streamlined. They currently consist of:

- specific quantities of 66 commonly used construction materials;
- specific labor-hours for 21 building construction trades; and
- specific days of equipment rental for 6 types of construction equipment (normally used to install the 66 material items by the 21 trades.) Fuel costs and routine maintenance costs are included in the equipment cost.

A sophisticated computer program handles the updating of all costs for each city on a quarterly basis. Material and equipment price quotations are gathered quarterly from 731 cities in the United States and Canada. These prices and the latest negotiated labor wage rates for 21 different building trades are used to compile the quarterly update of the City Cost Index.

The 30 major U.S. cities used to calculate the National Average are:

Atlanta, GA	Memphis, TN
Baltimore, MD	Milwaukee, WI
Boston, MA	Minneapolis, MN
Buffalo, NY	Nashville, TN
Chicago, IL	New Orleans, LA
Cincinnati, OH	New York, NY
Cleveland, OH	Philadelphia, PA
Columbus, OH	Phoenix, AZ
Dallas, TX	Pittsburgh, PA
Denver, CO	St. Louis, MO
Detroit, MI	San Antonio, TX
Houston, TX	San Diego, CA
Indianapolis, IN	San Francisco, CA
Kansas City, MO	Seattle, WA
Los Angeles, CA	Washington, DC

What the CCI does not indicate

The weighted average for each city is a total of the divisional components weighted to reflect typical usage, but it does not include the productivity variations between trades or cities.

In addition, the CCI does not take into consideration factors such as the following:

- managerial efficiency
- competitive conditions
- automation
- restrictive union practices
- unique local requirements
- regional variations due to specific building codes

City Cost Indexes

DIVISION		UNITED STATES						ALABAMA											
		30 CITY			ANNISTON			BIRMINGHAM			BUTLER			DECATUR			DOTHAN		
		AVERAGE			362			350 - 352			369			356			363		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.0	100.0		101.6	101.6		101.7	101.7		98.8	98.8		101.6	101.6		98.8	98.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.0	100.0	100.0	87.7	94.3	92.3	88.8	94.9	93.1	101.0	88.3	92.1	81.3	92.8	89.3	98.7	88.3	91.4
0310	Concrete Forming & Accessories	100.0	100.0	100.0	92.7	48.2	54.3	93.3	70.2	73.4	89.0	43.6	49.8	94.7	46.4	53.0	97.9	43.0	50.5
0320	Concrete Reinforcing	100.0	100.0	100.0	87.0	87.4	87.2	92.9	87.8	90.4	92.0	47.4	69.7	87.0	79.5	83.3	92.0	46.8	69.4
0330	Cast-in-Place Concrete	100.0	100.0	100.0	102.0	50.5	80.6	99.7	74.7	89.3	99.4	55.7	81.3	93.7	65.1	81.9	99.4	47.0	77.7
03	CONCRETE	100.0	100.0	100.0	99.8	57.9	79.1	95.1	76.1	85.7	100.6	50.4	75.8	91.4	60.7	76.3	100.0	47.0	73.9
04	MASONRY	100.0	100.0	100.0	90.5	67.9	76.5	89.9	76.2	81.4	95.3	49.4	66.9	88.4	52.1	66.0	96.6	40.4	61.8
05	METALS	100.0	100.0	100.0	96.9	92.5	95.5	97.0	94.7	96.3	95.8	78.1	90.4	99.0	87.7	95.5	95.9	76.9	90.0
06	WOOD, PLASTICS & COMPOSITES	100.0	100.0	100.0	92.7	43.7	65.1	96.3	68.3	80.5	87.3	43.4	62.5	98.0	43.9	67.5	99.6	43.4	67.9
07	THERMAL & MOISTURE PROTECTION	100.0	100.0	100.0	100.1	53.8	81.3	95.9	81.4	90.0	100.1	57.6	82.9	93.1	59.3	79.4	100.1	49.9	79.7
08	OPENINGS	100.0	100.0	100.0	93.9	50.9	83.8	95.8	72.3	90.3	94.0	45.2	82.4	98.8	51.6	87.6	94.0	45.2	82.5
0920	Plaster & Gypsum Board	100.0	100.0	100.0	87.5	42.4	56.8	97.0	67.8	77.1	84.9	42.0	55.7	98.1	42.6	60.4	95.3	42.0	59.1
0950, 0980	Ceilings & Acoustic Treatment	100.0	100.0	100.0	87.8	42.4	57.6	98.4	67.8	78.0	87.8	42.0	57.3	95.7	42.6	60.4	87.8	42.0	57.3
0960	Flooring	100.0	100.0	100.0	104.1	41.0	85.2	109.0	76.2	99.2	109.2	57.0	93.6	106.0	51.5	89.7	114.9	28.0	88.9
0970, 0990	Wall Finishes & Painting/Coating	100.0	100.0	100.0	91.4	32.1	55.8	93.5	56.8	71.4	91.4	54.5	69.2	89.3	68.2	76.7	91.4	54.5	69.2
09	FINISHES	100.0	100.0	100.0	92.7	44.0	65.6	99.4	69.3	82.6	95.9	46.7	68.5	95.9	48.8	69.7	98.7	41.0	66.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	100.0	100.0	100.0	70.1	94.0	100.0	87.4	97.5	100.0	42.5	88.5	100.0	44.4	88.9	100.0	42.6	88.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	100.0	100.0	99.9	56.6	82.6	100.0	62.8	85.1	97.3	34.0	71.9	100.0	41.7	76.6	97.3	33.9	71.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.0	100.0	100.0	90.7	58.7	74.0	99.7	62.8	80.4	92.6	41.2	65.7	94.5	66.5	79.9	91.5	58.8	74.4
MF2010	WEIGHTED AVERAGE	100.0	100.0	100.0	96.5	63.0	81.9	97.5	74.1	87.3	96.8	50.5	76.6	96.6	59.1	80.3	96.9	50.5	76.7
DIVISION		ALABAMA																	
		EVERGREEN			GADSDEN			HUNTSVILLE			JASPER			MOBILE			MONTGOMERY		
		364			359			357 - 358			356			365 - 366			360 - 361		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.8	98.8		101.6	101.6		101.6	101.6		101.6	101.6		98.8	98.8		98.8	98.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.5	88.6	92.4	86.7	93.8	91.7	81.1	93.8	90.0	86.3	93.6	91.4	94.0	89.3	90.7	94.0	89.2	90.6
0310	Concrete Forming & Accessories	85.6	45.2	50.8	87.0	43.3	49.3	94.7	71.1	74.3	92.2	35.3	43.0	97.1	55.0	60.7	96.9	45.0	52.1
0320	Concrete Reinforcing	92.0	47.4	69.7	92.2	87.7	90.0	87.0	80.5	83.8	87.0	86.5	86.8	89.8	79.4	84.6	94.9	87.1	91.0
0330	Cast-in-Place Concrete	99.5	58.3	82.4	93.8	66.7	82.5	91.3	69.6	82.3	103.9	44.8	79.3	104.3	67.4	88.9	105.4	57.4	85.5
03	CONCRETE	100.9	52.0	76.8	95.7	61.4	78.8	90.3	73.3	81.9	98.9	50.1	74.8	97.0	65.3	81.4	98.3	58.9	78.8
04	MASONRY	95.4	54.1	69.8	86.7	62.3	71.6	89.7	67.7	76.1	84.2	42.0	58.1	93.8	55.1	69.9	90.4	50.5	65.7
05	METALS	95.9	78.1	90.4	96.9	94.0	96.0	99.0	90.5	96.4	96.9	91.1	95.1	97.9	90.6	95.6	97.0	92.8	95.7
06	WOOD, PLASTICS & COMPOSITES	83.6	43.4	60.9	87.8	39.6	60.6	98.0	74.3	84.6	94.8	32.3	59.6	98.2	54.1	73.3	97.7	43.4	67.0
07	THERMAL & MOISTURE PROTECTION	100.1	57.9	83.0	93.1	72.4	84.7	93.0	78.5	87.1	93.2	46.1	74.1	99.8	71.3	88.2	100.2	67.8	87.0
08	OPENINGS	94.0	45.2	82.4	95.4	49.8	84.6	98.8	68.2	91.5	95.3	48.7	84.3	97.2	58.6	88.1	98.3	54.0	87.8
0920	Plaster & Gypsum Board	84.2	42.0	55.5	89.8	38.2	54.7	98.1	73.9	81.7	94.2	30.7	51.0	92.1	53.1	65.5	91.5	42.0	57.8
0950, 0980	Ceilings & Acoustic Treatment	87.8	42.0	57.3	92.1	38.2	56.2	97.6	73.9	81.9	92.1	30.7	51.2	93.3	53.1	66.5	95.9	42.0	60.0
0960	Flooring	107.0	57.0	92.1	102.0	76.2	94.3	106.0	76.2	97.1	104.3	41.0	85.3	114.6	59.5	98.1	110.8	59.5	95.5
0970, 0990	Wall Finishes & Painting/Coating	91.4	54.5	69.2	89.3	62.0	72.9	89.3	59.7	71.5	89.3	39.4	59.3	95.0	55.4	71.2	91.2	54.5	69.1
09	FINISHES	95.3	47.9	68.9	93.3	49.4	68.8	96.4	71.1	82.3	94.5	35.2	61.5	99.0	54.7	74.3	99.0	47.1	70.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	44.1	88.8	100.0	79.5	95.9	100.0	85.3	97.0	100.0	40.8	88.1	100.0	83.9	96.8	100.0	79.4	95.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.3	36.3	72.9	102.0	36.9	75.9	100.0	52.9	81.1	102.0	53.8	82.6	100.0	61.5	84.5	100.1	34.8	73.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.1	41.2	64.6	94.5	62.8	78.0	95.7	66.5	80.4	94.1	62.8	77.7	93.4	58.5	75.2	93.9	62.3	77.4
MF2010	WEIGHTED AVERAGE	96.5	51.9	77.1	96.7	60.8	81.1	96.7	70.8	85.4	97.0	56.7	79.4	97.8	65.9	83.9	97.9	58.1	80.5
DIVISION		ALABAMA																	
		PHENIX CITY			SELMA			TUSCALOOSA			ANCHORAGE			FAIRBANKS			JUNEAU		
		368			367			354			995 - 996			997			998		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.8	98.8		98.8	98.8		101.6	101.6		113.5	113.5		113.5	113.5		113.5	113.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.2	89.3	94.0	98.6	89.1	92.0	81.6	94.0	90.3	125.5	128.8	127.8	116.4	128.8	125.1	132.0	128.8	129.8
0310	Concrete Forming & Accessories	92.6	39.9	47.1	90.3	43.5	49.9	94.6	48.8	55.1	127.8	119.0	120.2	133.0	118.7	120.7	129.2	118.9	120.3
0320	Concrete Reinforcing	91.9	63.3	77.7	92.0	86.2	89.1	87.0	87.7	87.3	148.0	111.5	129.8	142.1	111.5	126.8	122.7	111.5	117.1
0330	Cast-in-Place Concrete	99.5	57.9	82.2	99.4	47.2	77.8	95.1	68.5	84.1	131.0	117.4	125.3	129.2	117.7	124.4	136.1	117.4	128.3
03	CONCRETE	103.6	52.4	78.3	99.4	54.5	77.3	92.1	64.5	78.5	143.0	116.3	129.8	126.5	116.3	121.4	139.9	116.2	128.2
04	MASONRY	95.3	41.8	62.2	98.7	39.3	62.0	88.6	65.5	74.3	180.9	122.2	144.6	182.2	122.2	145.1	167.6	122.2	139.5
05	METALS	95.8	83.5	92.0	95.8	90.3	94.1	98.2	94.1	96.9	114.6	102.5	110.9	118.8	102.6	113.8	117.6	102.4	112.9
06	WOOD, PLASTICS & COMPOSITES	92.5	36.3	60.8	89.3	43.4	63.4	98.0	45.4	68.3	117.1	117.9	117.6	125.0	117.4	120.7	119.8	117.9	118.7
07	THERMAL & MOISTURE PROTECTION	100.4	64.9	86.0	100.0	53.0	80.9	93.1	74.4	85.5	169.9	115.							

City Cost Indexes

DIVISION		ALASKA						ARIZONA											
		KETCHIKAN			CHAMBERS			FLAGSTAFF			GLOBE			KINGMAN			MESA/TEMPE		
		999			855			864			855			864			852		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		113.5	113.5		92.6	92.6		92.6	92.6		94.2	94.2		92.6	92.6		94.2	94.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	170.9	128.8	141.3	67.2	96.6	87.9	84.8	96.8	93.3	100.7	98.4	99.1	67.2	96.8	88.0	91.4	98.6	96.4
0310	Concrete Forming & Accessories	124.5	118.9	119.7	98.2	59.2	64.5	103.7	66.4	71.5	96.3	59.3	64.3	96.5	66.4	70.5	99.3	69.6	73.6
0320	Concrete Reinforcing	111.6	111.5	111.5	100.0	83.5	91.7	99.8	83.5	91.7	110.1	83.5	96.8	100.1	83.5	91.8	110.8	83.5	97.2
0330	Cast-in-Place Concrete	261.0	117.4	201.4	90.3	73.5	83.3	90.4	73.8	83.5	93.8	73.6	85.4	90.0	73.8	83.3	94.6	73.9	86.0
03	CONCRETE	214.6	116.2	166.0	96.5	68.9	82.8	116.1	72.2	94.4	109.8	68.9	89.7	96.1	72.2	84.3	101.7	73.7	87.8
04	MASONRY	191.0	122.2	148.4	90.6	62.7	73.3	90.7	62.8	73.4	110.3	62.7	80.9	90.6	62.8	73.4	110.6	62.8	81.0
05	METALS	119.0	102.4	113.9	95.1	75.0	88.9	95.6	75.7	89.5	92.4	75.5	87.2	95.7	75.8	89.6	92.7	76.4	87.7
06	WOOD, PLASTICS & COMPOSITES	115.7	117.9	117.0	96.1	56.3	73.6	102.2	65.7	81.6	90.0	56.4	71.0	91.6	65.7	77.0	93.4	69.9	80.2
07	THERMAL & MOISTURE PROTECTION	172.3	115.5	149.2	95.1	65.1	82.9	96.7	68.2	85.1	99.3	64.6	85.2	95.0	65.7	83.1	98.6	66.6	85.6
08	OPENINGS	118.1	115.2	117.4	108.1	65.7	98.1	108.2	70.8	99.4	102.2	65.8	93.6	108.3	70.8	99.4	102.3	73.2	95.4
0920	Plaster & Gypsum Board	137.4	118.3	124.4	85.6	55.0	64.8	89.1	64.7	72.5	94.2	55.0	67.5	79.1	64.7	69.3	96.4	69.0	77.7
0950, 0980	Ceilings & Acoustic Treatment	114.7	118.3	117.1	107.8	55.0	72.7	108.7	64.7	79.4	96.4	55.0	68.8	108.7	64.7	79.4	96.4	69.0	78.1
0960	Flooring	140.7	128.3	137.0	92.1	40.3	76.6	94.1	40.4	78.1	100.0	40.3	82.1	91.1	54.7	80.2	101.1	50.4	86.0
0970, 0990	Wall Finishes & Painting/Coating	143.9	113.3	125.5	97.8	56.3	72.9	97.8	56.3	72.9	108.9	56.3	77.3	97.8	56.3	72.9	108.9	56.3	77.3
09	FINISHES	140.7	120.5	129.5	95.7	54.0	72.4	98.8	59.6	76.9	97.6	54.1	73.4	94.7	62.0	76.5	97.1	64.0	78.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	112.5	102.5	100.0	82.3	96.5	100.0	83.3	96.7	100.0	82.5	96.5	100.0	83.3	96.7	100.0	84.0	96.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.4	100.6	99.3	97.0	78.9	89.7	100.2	80.0	92.1	95.2	78.9	88.7	97.0	80.0	90.2	100.1	79.0	91.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	134.6	115.6	124.7	102.2	72.6	86.7	101.1	65.8	82.7	98.7	65.8	81.6	102.2	65.8	83.2	95.3	65.8	79.9
MF2010	WEIGHTED AVERAGE	132.0	113.5	124.0	97.3	71.9	86.3	101.0	72.9	88.8	99.0	71.2	86.9	97.3	73.2	86.8	98.8	73.8	87.9
DIVISION		ARIZONA												ARKANSAS					
		PHOENIX			PRESCOTT			SHOW LOW			TUCSON			BATESVILLE			CAMDEN		
		850,853			859			859			856 - 857			725			717		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.7	94.7		92.6	92.6		94.2	94.2		94.2	94.2		89.0	89.0		89.0	89.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.9	98.8	96.7	73.5	96.6	89.7	102.8	98.4	99.7	87.1	98.6	95.1	73.4	84.9	81.5	73.3	84.5	81.2
0310	Concrete Forming & Accessories	100.2	69.7	73.9	99.8	53.5	59.8	103.2	69.3	74.0	99.8	69.5	73.6	85.2	45.9	51.3	83.9	31.4	38.6
0320	Concrete Reinforcing	109.0	83.7	96.3	99.8	83.5	91.6	110.8	83.5	97.2	91.8	83.5	87.6	86.7	65.8	76.3	88.2	65.7	76.9
0330	Cast-in-Place Concrete	94.7	74.0	86.1	90.3	73.5	83.3	93.9	73.6	85.5	97.4	73.9	87.6	81.1	46.1	66.6	81.2	39.0	63.7
03	CONCRETE	101.3	73.8	87.7	101.7	66.3	84.2	112.1	73.4	93.0	99.7	73.6	86.8	85.2	50.5	68.0	86.9	41.5	64.5
04	MASONRY	98.0	64.6	77.3	90.7	62.7	73.4	110.4	62.7	80.9	95.9	62.8	75.4	98.7	41.5	63.3	111.6	31.9	62.3
05	METALS	94.2	77.2	88.9	95.6	74.7	89.2	92.2	75.7	87.1	93.5	76.3	88.2	98.0	66.9	88.4	97.3	66.5	87.8
06	WOOD, PLASTICS & COMPOSITES	94.4	69.9	80.6	97.5	48.5	69.9	98.0	69.9	82.1	93.7	69.9	80.3	86.3	46.5	63.9	89.8	30.4	56.3
07	THERMAL & MOISTURE PROTECTION	98.2	68.7	86.2	95.5	64.2	82.8	99.5	66.5	86.1	99.6	65.8	85.9	100.2	44.8	77.7	96.1	36.4	71.9
08	OPENINGS	104.2	73.2	96.9	108.2	61.5	97.2	101.3	73.2	94.7	98.3	73.2	92.4	94.6	46.0	83.1	93.5	40.6	81.0
0920	Plaster & Gypsum Board	98.5	69.0	78.4	85.7	47.0	59.4	98.6	69.0	78.4	101.9	69.0	79.5	81.0	45.4	56.7	80.2	28.7	45.2
0950, 0980	Ceilings & Acoustic Treatment	103.5	69.0	80.5	106.9	47.0	67.1	96.4	69.0	78.1	97.3	69.0	78.4	90.6	45.4	60.5	86.2	28.7	47.9
0960	Flooring	101.4	52.7	86.8	92.9	40.3	77.1	102.5	45.9	85.5	91.9	45.0	77.9	104.6	60.1	91.3	111.2	40.3	90.0
0970, 0990	Wall Finishes & Painting/Coating	108.9	62.0	80.7	97.8	56.3	72.9	108.9	56.3	77.3	110.1	56.3	77.8	99.8	42.0	65.1	99.5	50.8	70.2
09	FINISHES	99.1	65.0	80.1	96.2	49.4	70.1	99.2	63.0	79.0	95.4	62.9	77.3	89.8	47.8	66.4	92.1	34.2	59.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.0	96.8	100.0	81.4	96.3	100.0	84.0	96.8	100.0	84.0	96.8	100.0	40.6	88.1	100.0	36.5	87.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	80.0	92.0	100.2	78.9	91.7	95.2	79.0	88.7	100.1	79.0	91.6	95.3	52.1	77.9	95.3	53.5	78.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.2	68.3	84.5	100.7	65.8	82.5	95.7	65.8	80.1	97.6	65.8	81.0	95.0	64.0	78.8	91.5	62.0	76.1
MF2010	WEIGHTED AVERAGE	99.4	74.8	88.7	98.9	69.7	86.2	99.1	73.5	88.0	97.6	73.6	87.1	94.2	55.1	77.2	94.5	50.4	75.3
DIVISION		ARKANSAS																	
		FAYETTEVILLE			FORT SMITH			HARRISON			HOT SPRINGS			JONESBORO			LITTLE ROCK		
		727			729			726			719			724			720 - 722		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.0	89.0		89.0	89.0		89.0	89.0		89.0	89.0		107.5	107.5		89.0	89.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	72.8	86.4	82.4	77.7	86.3	83.8	77.9	84.9	82.8	76.4	85.9	83.0	96.9	100.3	99.3	87.9	86.3	86.8
0310	Concrete Forming & Accessories	80.6	39.4	45.1	100.2	57.7	63.5	89.7	45.8	51.8	81.2	36.5	42.6	88.7	49.2	54.6	95.3	60.4	65.2
0320	Concrete Reinforcing	86.7	71.6	79.2	87.7	72.3	80.0	86.3	65.7	76.0	86.5	65.8	76.2	83.9	64.8	74.4	92.7	66.5	79.6
0330	Cast-in-Place Concrete	81.1	50.2	68.3	92.8	70.4	83.5	90.0	44.2	71.0	83.0	39.5	64.9	88.3	55.9	74.9	91.5	70.5	82.8
03	CONCRETE	84.9	50.1	67.7	93.1	65.3	79.4	92.6	49.8	71.4	90.7	44.0	67.6	89.8	55.9	73.1	94.7	65.4	80.2
04	MASONRY	89.1	42.1	60.0	94.1	50.0	66.8	99.0	39.7	62.3	83.9	34.1	53.1	90.5	42.6	60.9	93.9	50.0	66.7
05	METALS	98.0	69.3	89.1	100.3	71.1	91.3	99.1	66.6	89.1	97.3	66.9	87.9	94.6	78.8	89.7	100.5	69.2	90.8
06	WOOD, PLASTICS & COMPOSITES	81.9	36.3	56.2	103.9	60.4	79.4	92.3	46.5	66.5	86.8	36.5	58.4	90.1	49.4	67.1	96.3	63.9	78.1
07	THERMAL & MOISTURE PROTECTION	101.0	46.2	78.8	101.4	54.5	82.4	100.5	43.5	77.4	96.3								

City Cost Indexes

DIVISION		ARKANSAS												CALIFORNIA					
		PINE BLUFF			RUSSELLVILLE			TEXARKANA			WEST MEMPHIS			ALHAMBRA			ANAHEIM		
		716			728			718			723			917 - 918			928		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.0	89.0		89.0	89.0		89.7	89.7		107.5	107.5		98.9	98.9		100.0	100.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	78.5	86.3	84.0	74.5	84.9	81.8	90.2	86.9	87.9	103.2	100.3	101.2	96.4	109.7	105.7	96.5	107.7	104.4
0310	Concrete Forming & Accessories	80.9	60.3	63.2	85.9	56.0	60.1	87.6	41.0	47.4	94.4	49.5	55.6	115.1	116.9	116.6	105.5	123.1	120.7
0320	Concrete Reinforcing	88.1	66.5	77.3	87.3	65.6	76.5	87.7	65.8	76.8	83.9	64.9	74.4	107.4	114.9	111.1	93.2	114.8	103.9
0330	Cast-in-Place Concrete	83.0	70.4	77.8	85.0	46.0	68.8	90.5	44.0	71.2	92.6	56.0	77.4	94.7	119.1	104.8	91.3	121.7	104.0
03	CONCRETE	91.5	65.4	78.6	88.4	54.9	71.9	89.1	47.6	68.6	97.3	56.0	76.9	104.0	116.4	110.1	103.1	120.0	111.4
04	MASONRY	120.2	50.0	76.8	93.3	38.0	59.1	98.1	33.7	58.2	76.8	42.6	55.7	122.3	118.6	120.0	77.4	116.2	101.4
05	METALS	98.0	69.1	89.1	98.0	66.5	88.3	90.8	67.0	83.5	93.6	79.1	89.2	84.0	99.9	88.9	103.1	100.2	102.2
06	WOOD, PLASTICS & COMPOSITES	86.3	63.9	73.7	87.7	60.4	72.3	95.2	43.0	65.7	96.3	49.4	69.9	96.6	113.1	105.9	98.5	121.4	111.4
07	THERMAL & MOISTURE PROTECTION	96.4	54.9	79.6	101.2	44.7	78.3	97.1	45.3	76.1	105.6	50.0	83.1	95.2	117.2	104.2	97.9	121.3	107.4
08	OPENINGS	93.5	58.9	85.3	94.6	56.2	85.5	98.3	46.7	86.1	97.4	53.5	87.0	89.8	115.5	95.9	100.3	120.2	105.0
0920	Plaster & Gypsum Board	78.4	63.3	68.1	81.0	59.7	66.5	82.2	41.7	54.6	98.0	48.0	64.0	102.1	113.7	110.0	100.6	122.0	115.2
0950, 0980	Ceilings & Acoustic Treatment	86.2	63.3	71.0	90.6	59.7	70.0	89.7	41.7	57.8	91.8	48.0	62.7	102.5	113.7	109.9	106.7	122.0	116.9
0960	Flooring	109.7	61.9	95.4	104.3	60.1	91.1	111.9	51.9	94.0	76.7	54.4	70.0	93.0	109.2	97.8	105.1	114.1	107.8
0970, 0990	Wall Finishes & Painting/Coating	99.5	56.4	73.6	99.8	35.7	61.3	99.5	31.0	58.3	88.3	50.8	65.8	101.7	108.4	105.7	100.4	106.2	103.9
09	FINISHES	91.8	60.7	74.5	90.0	55.3	70.7	94.3	41.3	64.7	87.7	49.8	66.6	98.0	114.0	106.9	102.0	119.6	111.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	77.2	95.4	100.0	42.1	88.4	100.0	33.5	86.7	100.0	46.4	89.3	100.0	110.1	102.0	100.0	111.3	102.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	52.4	81.1	95.3	51.9	77.9	100.2	54.6	81.9	95.5	66.5	83.9	95.1	113.7	102.6	100.0	118.0	107.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	91.6	69.5	80.1	92.2	45.7	68.0	93.4	36.8	63.9	100.6	65.8	82.4	120.2	119.9	120.0	91.4	105.9	99.0
MF2010	WEIGHTED AVERAGE	96.9	62.9	82.1	94.1	54.4	76.8	95.7	49.9	75.7	95.6	62.7	81.2	98.2	113.9	105.0	98.9	114.1	105.6
DIVISION		CALIFORNIA																	
		BAKERSFIELD			BERKELEY			EUREKA			FRESNO			INGLEWOOD			LONG BEACH		
		932 - 933			947			955			936 - 938			903 - 905			906 - 908		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.9	97.9		98.5	98.5		97.6	97.6		97.9	97.9		95.7	95.7		95.7	95.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.5	105.3	103.0	119.7	106.0	110.1	108.5	101.6	103.7	99.4	104.8	103.2	92.6	102.2	99.3	99.8	102.2	101.5
0310	Concrete Forming & Accessories	104.6	122.7	120.2	118.3	148.0	143.9	114.9	130.6	128.4	103.9	131.7	127.9	113.1	116.9	116.4	108.0	116.9	115.7
0320	Concrete Reinforcing	108.4	114.7	111.5	92.5	116.2	104.3	101.9	115.4	108.6	84.7	115.4	100.0	108.6	114.9	111.7	107.6	114.9	111.2
0330	Cast-in-Place Concrete	92.1	120.7	104.0	127.8	122.0	125.4	99.1	116.3	106.2	97.5	117.3	105.7	87.6	120.2	101.1	99.7	120.2	108.2
03	CONCRETE	101.1	119.4	110.1	110.4	131.2	120.6	114.4	121.4	117.8	101.5	122.4	111.8	95.7	116.8	106.1	105.0	116.8	110.8
04	MASONRY	93.2	115.7	107.1	119.2	131.9	127.0	99.4	123.4	114.3	96.3	121.3	111.7	75.8	118.7	102.4	84.5	118.7	105.7
05	METALS	105.8	99.4	103.8	106.5	100.3	104.6	102.9	97.8	101.3	105.9	100.4	104.2	93.8	100.6	95.9	93.7	100.6	95.8
06	WOOD, PLASTICS & COMPOSITES	93.8	121.5	109.4	110.4	154.0	135.0	112.3	135.9	125.6	105.3	135.9	122.5	106.0	113.2	110.1	99.5	113.2	107.2
07	THERMAL & MOISTURE PROTECTION	104.0	111.9	107.2	103.2	135.9	116.5	101.9	116.0	107.6	94.0	113.6	101.9	100.9	118.5	108.1	101.1	118.5	108.2
08	OPENINGS	96.5	116.2	101.2	96.8	140.5	107.1	99.8	112.7	102.8	96.7	124.0	103.1	91.0	115.5	96.8	91.0	115.5	96.8
0920	Plaster & Gypsum Board	98.9	122.0	114.7	102.8	155.2	138.4	106.0	136.9	127.0	97.5	136.9	124.3	103.9	113.7	110.5	99.8	113.7	109.2
0950, 0980	Ceilings & Acoustic Treatment	109.6	122.0	117.9	104.1	155.2	138.1	112.1	136.9	128.6	106.0	136.9	126.5	101.7	113.7	109.7	101.7	113.7	109.7
0960	Flooring	104.9	109.2	106.2	108.7	126.4	114.0	109.3	118.7	112.1	110.4	135.9	118.0	98.9	109.2	102.0	96.5	109.2	100.3
0970, 0990	Wall Finishes & Painting/Coating	100.8	104.2	102.8	102.7	142.1	126.4	102.0	47.2	69.1	115.0	108.6	111.1	102.1	108.4	105.9	102.1	108.4	105.9
09	FINISHES	102.9	118.7	111.7	103.9	145.5	127.1	107.9	122.2	115.9	104.3	131.9	119.7	101.4	114.1	108.4	100.6	114.1	108.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	111.3	102.3	100.0	125.1	105.0	100.0	121.4	104.3	100.0	121.4	104.3	100.0	110.2	102.0	100.0	110.2	102.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	108.3	103.4	95.2	144.7	115.0	95.1	99.1	96.7	100.2	109.6	104.0	94.7	113.7	102.4	94.7	113.7	102.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.0	102.3	102.2	109.2	142.6	126.6	98.8	112.6	106.0	91.7	102.9	97.6	105.5	119.9	113.0	105.2	119.9	112.9
MF2010	WEIGHTED AVERAGE	100.8	110.6	105.1	103.4	133.1	116.4	101.6	111.6	106.0	100.0	114.5	106.3	95.7	113.4	103.4	97.1	113.4	104.2
DIVISION		CALIFORNIA																	
		LOS ANGELES			MARYSVILLE			MODESTO			MOJAVE			OAKLAND			OXNARD		
		900 - 902			959			959			935			946			930		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.2	99.2		97.6	97.6		97.6	97.6		97.9	97.9		98.5	98.5		96.8	96.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.3	105.7	104.1	104.8	104.5	104.6	99.6	104.5	103.0	93.1	105.3	101.7	126.2	106.0	112.0	99.7	103.4	102.3
0310	Concrete Forming & Accessories	109.9	123.2	121.4	105.0	131.8	128.2	101.3	131.8	127.7	116.3	113.5	113.9	107.2	148.0	142.4	107.7	123.1	121.0
0320	Concrete Reinforcing	109.4	115.0	112.2	101.9	115.3	108.6	105.5	115.5	110.5	102.0	114.6	108.3	94.6	116.2	105.4	100.1	114.8	107.4
0330	Cast-in-Place Concrete	94.6	120.9	105.5	110.7	117.6	113.6	99.1	117.6	106.8	84.4	120.7	99.4	121.2	122.0	121.5	98.2	121.0	107.6
03	CONCRETE	100.9	119.9	110.3	115.1	122.6	118.8	105.9	122.6	114.1	93.9	115.4	104.5	109.9	131.2	120.4	102.1	119.8	110.8
04	MASONRY	90.0	119.9	108.5	100.3	118.2	111.4	99.3	122.3	113.5	94.7	115.7	107.7	126.6	131.9	129.9	97.5	116.5	109.3
05	METALS	100.6	102.0	101.0	102.4	101.1	102.0	99.6	101.4	100.2	102.6	99.3	101.6	100.8	100.3	100.7	100.7	100.0	

City Cost Indexes

DIVISION		CALIFORNIA																	
		PALM SPRINGS			PALO ALTO			PASADENA			REDDING			RICHMOND			RIVERSIDE		
		922			948			910 - 912			960			948			925		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.8	98.8		98.5	98.5		98.9	98.9		97.6	97.6		98.5	98.5		98.8	98.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.2	105.7	100.5	115.6	106.0	108.8	93.4	109.7	104.8	109.5	104.5	106.0	125.4	106.0	111.8	95.0	105.7	102.5
0310	Concrete Forming & Accessories	102.1	116.9	114.9	105.4	144.5	139.2	104.9	116.9	115.2	105.0	129.6	126.2	120.9	147.8	144.2	105.8	123.1	120.7
0320	Concrete Reinforcing	107.1	114.7	110.9	92.5	115.9	104.2	108.3	114.9	111.6	104.7	115.3	110.0	92.5	116.0	104.2	104.1	114.7	109.4
0330	Cast-in-Place Concrete	87.1	121.6	101.4	108.1	122.0	113.8	89.9	119.1	102.0	110.9	117.6	113.7	124.3	122.0	123.4	94.7	121.7	105.9
03	CONCRETE	97.7	117.2	107.3	99.3	129.6	114.2	99.4	116.4	107.8	115.2	121.5	118.3	112.0	131.0	121.4	103.8	120.0	111.8
04	MASONRY	74.9	115.9	100.3	101.7	127.8	117.8	106.8	118.6	114.1	110.3	118.2	115.2	119.0	127.8	124.4	75.9	115.9	100.7
05	METALS	103.8	99.9	102.6	98.3	99.8	98.8	84.1	99.9	88.9	100.5	101.1	100.7	98.4	99.8	98.8	103.4	100.1	102.4
06	WOOD, PLASTICS & COMPOSITES	93.2	113.3	104.5	95.8	149.6	126.1	83.3	113.1	100.1	97.8	132.8	117.5	114.2	154.0	136.7	98.5	121.4	111.4
07	THERMAL & MOISTURE PROTECTION	97.6	119.0	106.3	100.8	133.4	114.0	95.0	117.2	104.0	108.6	118.9	112.8	101.4	134.2	114.7	98.1	121.2	107.5
08	OPENINGS	96.6	115.5	101.1	96.8	137.5	106.5	89.8	115.5	95.9	102.0	123.0	107.0	96.9	139.9	107.1	99.1	120.2	104.1
0920	Plaster & Gypsum Board	95.5	113.7	107.9	95.6	150.6	133.0	95.0	113.7	107.7	104.5	133.7	124.4	104.9	155.2	139.1	99.9	122.0	115.0
0950, 0980	Ceilings & Acoustic Treatment	104.1	113.7	110.5	105.0	150.6	135.4	102.5	113.7	109.9	131.8	133.7	133.1	105.0	155.2	138.4	111.0	122.0	118.4
0960	Flooring	107.7	109.2	108.1	103.4	126.4	110.3	88.9	109.2	95.0	105.4	111.3	107.2	110.3	126.4	115.1	109.1	114.1	110.6
0970, 0990	Wall Finishes & Painting/Coating	98.7	113.7	107.7	102.7	142.1	126.4	101.7	108.4	105.7	104.1	118.3	112.6	102.7	142.1	126.4	98.7	106.2	103.2
09	FINISHES	100.7	114.7	108.5	101.4	142.9	124.5	95.7	114.0	105.9	110.9	127.1	119.9	105.4	145.5	127.7	103.5	119.6	112.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	110.4	102.1	100.0	124.7	104.9	100.0	110.1	102.0	100.0	121.1	104.2	100.0	125.1	105.0	100.0	111.3	102.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.1	113.6	102.5	95.2	143.3	114.5	95.1	113.7	102.6	100.1	109.8	104.0	95.2	144.7	115.0	100.0	118.0	107.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.0	106.0	100.8	108.1	153.8	132.0	116.8	119.9	118.4	97.8	109.9	104.1	108.8	132.4	121.1	91.6	106.0	99.1
MF2010	WEIGHTED AVERAGE	96.7	111.6	103.2	99.5	133.1	114.2	96.3	113.9	104.0	103.6	114.6	108.4	102.5	131.2	115.0	98.9	114.0	105.5

DIVISION		CALIFORNIA																	
		SACRAMENTO			SALINAS			SAN BERNARDINO			SAN DIEGO			SAN FRANCISCO			SAN JOSE		
		942,956 - 958			939			923 - 924			919 - 921			940 - 941			951		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.0	98.0		97.9	97.9		98.8	98.8		99.0	99.0		108.8	108.8		98.5	98.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.0	111.5	108.3	112.3	105.1	107.2	75.1	105.7	96.6	99.7	103.3	102.2	128.6	111.8	116.8	132.0	99.7	109.3
0310	Concrete Forming & Accessories	105.6	132.4	128.7	110.9	132.8	129.8	109.5	116.9	115.9	103.8	112.0	110.9	106.9	149.0	143.2	107.4	147.9	142.3
0320	Concrete Reinforcing	87.6	115.6	101.6	100.6	115.9	108.3	104.1	114.7	109.4	104.9	114.7	109.8	107.8	116.6	112.2	92.8	116.2	104.5
0330	Cast-in-Place Concrete	102.5	118.4	109.1	97.0	117.9	105.7	65.5	121.6	88.8	98.5	108.7	102.7	124.3	123.5	124.0	115.1	121.6	117.8
03	CONCRETE	99.8	122.7	111.1	112.4	123.2	117.7	77.7	117.2	97.2	104.6	110.7	107.6	113.5	132.7	123.0	111.8	131.4	121.5
04	MASONRY	103.4	122.3	115.1	94.4	127.4	114.8	82.4	115.9	103.1	97.1	114.2	107.7	127.2	136.2	132.8	126.8	131.9	130.0
05	METALS	96.4	95.7	96.2	105.3	102.5	104.4	103.3	99.9	102.3	99.6	101.3	100.1	107.1	110.1	108.0	97.8	107.1	100.6
06	WOOD, PLASTICS & COMPOSITES	92.3	136.1	117.0	104.4	136.1	122.3	102.3	113.3	108.5	97.0	108.8	103.6	98.4	154.2	129.9	107.5	153.8	133.6
07	THERMAL & MOISTURE PROTECTION	108.5	121.1	113.6	100.6	125.9	110.9	96.8	119.0	105.8	99.7	106.6	102.5	102.9	139.0	117.6	97.4	138.4	114.1
08	OPENINGS	110.7	124.8	114.1	95.6	130.7	103.9	96.6	115.5	101.1	96.8	111.4	100.3	101.4	140.6	110.7	89.5	140.3	101.5
0920	Plaster & Gypsum Board	92.5	136.9	122.7	102.9	137.1	126.2	101.7	113.7	109.9	102.3	108.9	106.8	99.8	155.2	137.5	96.2	155.2	136.3
0950, 0980	Ceilings & Acoustic Treatment	105.0	136.9	126.2	107.4	137.1	127.2	106.7	113.7	111.4	109.6	108.9	109.1	114.8	155.2	141.7	104.8	155.2	138.3
0960	Flooring	103.3	119.7	108.2	105.1	123.3	110.6	111.0	109.2	110.4	96.2	114.1	101.5	104.4	126.4	111.0	98.7	126.4	107.0
0970, 0990	Wall Finishes & Painting/Coating	100.3	118.3	111.1	101.6	142.1	126.0	98.7	106.2	103.2	98.3	106.4	103.2	102.7	152.6	132.7	102.3	142.1	126.2
09	FINISHES	99.8	130.4	116.9	104.2	133.7	120.6	101.8	113.9	108.6	101.0	111.3	106.7	105.2	146.8	128.4	102.7	145.3	126.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	121.9	104.4	100.0	121.5	104.3	100.0	110.2	102.1	100.0	109.1	101.8	100.0	125.6	105.1	100.0	124.7	105.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	121.9	108.7	95.2	115.3	103.2	95.1	113.8	102.6	100.0	116.3	106.5	100.0	171.6	128.7	100.0	143.3	117.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	103.4	111.3	107.5	91.7	122.8	107.9	95.0	103.7	99.6	102.2	98.9	100.5	108.3	161.4	136.1	101.0	153.8	128.6
MF2010	WEIGHTED AVERAGE	101.2	118.6	108.8	100.2	120.3	108.9	94.6	111.2	101.9	100.2	109.1	104.1	106.1	143.8	122.5	102.2	134.6	116.3

DIVISION		CALIFORNIA																	
		SAN LUIS OBISPO			SAN MATEO			SAN RAFAEL			SANTA ANA			SANTA BARBARA			SANTA CRUZ		
		931			944			948			926 - 927			931			950		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.9	97.9		98.9	98.9		98.9	98.9		98.8	98.8		97.9	97.9		98.5	98.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	104.7	105.3	105.1	122.8	106.0	111.0	113.7	111.6	112.2	86.7	105.7	100.0	99.6	105.3	103.6	131.6	99.5	109.0
0310	Concrete Forming & Accessories	118.0	116.9	117.0	111.2	147.9	142.9	115.2	147.8	143.4	109.7	116.9	115.9	108.6	123.1	121.1	107.5	133.0	129.5
0320	Concrete Reinforcing	102.0	114.8	108.4	92.5	116.1	104.3	93.1	116.1	104.6	107.6	114.7	111.2	100.1	114.8	107.4	115.0	115.9	115.5
0330	Cast-in-Place Concrete	104.2	120.8	111.1	120.4	122.0	121.0	140.1	121.2	132.2	83.6	121.6	99.4	97.8	120.9	107.4	114.3	119.8	116.6
03	CONCRETE	110.1	116.9	113.4	108.4	131.1	119.6	129.7	130.6	130.2	95.2	117.2	106.1	102.0	119.7	110.7	115.0	124.1	119.5
04	MASONRY	96.1	117.4	109.3	118.7	130.8	126.2	98.0	130.8	118.3	72.6	116.2	99.6	94.9	117.4	108.8	130.4	127.5	128.6

City Cost Indexes

DIVISION		CALIFORNIA												COLORADO		
		SANTA ROSA			STOCKTON			SUSANVILLE			VALLEJO			VAN NUYS		
		804			952			961			805			913 - 916		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.2	98.2		97.6	97.6		97.6	97.6		98.9	98.9		98.9	98.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.1	104.5	103.2	99.4	104.5	103.0	115.9	104.5	107.9	100.5	111.4	108.2	109.9	109.7	109.7
0310	Concrete Forming & Accessories	103.1	146.8	140.8	105.3	131.8	128.2	106.2	129.6	126.4	105.6	146.5	140.9	110.9	116.9	116.1
0320	Concrete Reinforcing	102.7	116.4	109.6	105.5	115.5	110.5	104.7	115.3	110.0	94.3	116.3	105.3	108.3	114.9	111.6
0330	Cast-in-Place Concrete	108.7	119.2	113.1	96.6	117.6	105.3	100.9	117.6	107.8	111.6	119.6	114.9	94.8	119.1	104.9
03	CONCRETE	114.9	130.0	122.4	104.9	122.6	113.6	117.6	121.5	119.5	105.2	129.5	117.2	113.8	116.4	115.1
04	MASONRY	98.6	133.7	120.3	99.2	122.3	113.5	108.3	118.2	114.4	74.6	132.4	110.4	122.3	118.6	120.0
05	METALS	103.7	104.3	103.9	99.8	101.4	100.3	99.6	101.1	100.1	99.6	97.6	99.0	83.2	99.9	88.3
06	WOOD, PLASTICS & COMPOSITES	94.6	153.6	127.9	100.8	135.9	120.6	99.5	132.8	118.3	89.8	153.8	125.9	91.6	113.1	103.8
07	THERMAL & MOISTURE PROTECTION	98.3	134.5	113.0	101.1	118.5	108.2	109.2	118.9	113.2	103.0	134.0	115.6	95.8	117.2	104.5
08	OPENINGS	97.4	140.2	107.6	98.0	124.7	104.3	101.9	123.0	106.9	110.0	140.3	117.2	89.7	115.5	95.8
0920	Plaster & Gypsum Board	97.2	155.2	136.7	101.0	136.9	125.4	105.4	133.7	124.7	97.3	155.2	136.7	99.9	113.7	109.3
0950, 0980	Ceilings & Acoustic Treatment	106.7	155.2	139.0	113.7	136.9	129.1	123.9	133.7	130.4	115.0	155.2	141.8	99.8	113.7	109.1
0960	Flooring	108.1	117.0	110.8	105.6	113.5	107.9	105.9	111.3	107.5	111.2	126.4	115.7	91.1	109.2	96.5
0970, 0990	Wall Finishes & Painting/Coating	98.7	142.1	124.8	102.0	118.3	111.8	104.1	118.3	112.6	99.9	142.1	125.3	101.7	108.4	105.7
09	FINISHES	102.6	143.0	125.1	105.5	129.2	118.7	110.4	127.1	119.7	102.8	144.7	126.1	97.7	114.0	106.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	123.2	104.7	100.0	121.4	104.3	100.0	121.1	104.2	100.0	123.7	104.7	100.0	110.1	102.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.1	163.4	122.5	100.0	108.8	103.5	95.2	109.8	101.0	100.0	128.8	111.6	95.1	113.7	102.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.4	116.6	106.4	97.9	110.9	104.7	98.1	109.9	104.3	100.6	125.1	113.4	116.8	119.9	118.4
MF2010	WEIGHTED AVERAGE	100.3	133.4	114.7	100.5	115.5	107.0	102.6	114.6	107.8	100.6	127.2	112.2	99.1	113.9	105.5
DIVISION		COLORADO														
		BOULDER			COLORADO SPRINGS			DENVER			DURANGO			FORT COLLINS		
		803			808 - 809			800 - 802			813			805		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.9	94.9		93.4	93.4		97.7	97.7		93.8	93.8		94.9	94.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	92.4	95.1	94.3	94.5	93.1	93.5	93.7	101.2	99.0	125.8	89.0	100.0	104.3	94.7	97.5
0310	Concrete Forming & Accessories	102.0	81.7	84.4	92.9	77.4	79.5	98.5	77.7	80.5	111.4	69.2	74.9	99.3	76.4	79.5
0320	Concrete Reinforcing	102.0	78.5	90.3	101.2	82.7	92.0	101.2	82.7	92.0	108.0	78.4	93.2	102.1	78.6	90.3
0330	Cast-in-Place Concrete	102.4	79.8	93.0	105.2	82.9	95.9	99.6	82.6	92.5	115.7	79.4	100.6	115.6	78.6	100.2
03	CONCRETE	104.7	80.6	92.8	108.1	80.6	94.6	102.4	80.6	91.7	117.8	74.8	96.5	115.3	77.8	96.8
04	MASONRY	93.1	73.2	80.8	94.1	73.0	81.0	96.1	73.3	82.0	110.9	72.4	87.1	110.4	76.9	89.7
05	METALS	97.7	84.4	93.6	100.8	86.5	96.4	103.4	86.7	98.2	97.2	81.2	92.2	98.9	81.3	93.5
06	WOOD, PLASTICS & COMPOSITES	93.3	84.9	88.6	83.8	79.1	81.2	91.0	79.0	84.3	102.6	69.0	83.7	90.8	79.0	84.1
07	THERMAL & MOISTURE PROTECTION	104.4	80.5	94.7	105.3	80.3	95.1	103.7	74.6	91.9	105.0	78.3	94.2	104.8	72.2	91.6
08	OPENINGS	101.5	83.9	97.3	105.8	82.0	100.2	106.5	81.9	100.7	105.3	75.3	98.2	101.4	80.7	96.5
0920	Plaster & Gypsum Board	104.0	84.6	90.8	86.1	78.6	81.0	99.6	78.6	85.3	88.1	67.9	74.3	98.0	78.6	84.8
0950, 0980	Ceilings & Acoustic Treatment	98.0	84.6	89.1	105.1	78.6	87.4	108.2	78.6	88.5	104.2	67.9	80.1	98.0	78.6	85.0
0960	Flooring	103.7	85.3	98.2	95.8	69.5	87.9	100.5	86.3	96.3	116.8	55.8	98.5	100.4	55.8	87.1
0970, 0990	Wall Finishes & Painting/Coating	100.8	68.0	81.1	100.5	41.4	65.0	100.8	77.3	86.7	113.0	24.1	59.6	100.8	41.1	64.9
09	FINISHES	102.6	81.2	90.7	99.4	72.0	84.2	103.1	79.0	89.7	106.9	61.2	81.5	101.4	68.9	83.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	90.0	98.0	100.0	89.7	97.9	100.0	89.4	97.9	100.0	89.1	97.8	100.0	89.4	97.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	77.6	88.1	100.2	72.7	89.2	100.0	79.9	91.9	95.2	84.9	91.0	100.1	77.5	91.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.9	85.2	90.8	100.5	83.0	91.4	102.1	85.2	93.3	96.2	71.1	83.1	96.9	85.1	90.7
MF2010	WEIGHTED AVERAGE	98.6	82.0	91.3	101.3	79.3	91.7	101.6	82.6	93.3	102.4	76.8	91.2	102.1	79.6	92.3
DIVISION		COLORADO														
		GLENWOOD SPRINGS			GOLDEN			GRAND JUNCTION			GREELEY			MONTROSE		
		816			804			805			805			814		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.5	96.5		94.9	94.9		96.5	96.5		94.9	94.9		95.1	95.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	140.8	95.9	109.3	104.4	94.9	97.7	125.5	95.5	104.5	91.7	94.1	93.4	134.6	92.1	104.8
0310	Concrete Forming & Accessories	102.3	76.7	80.2	95.2	76.5	79.1	110.1	76.2	80.8	97.5	80.2	82.5	101.8	76.4	79.9
0320	Concrete Reinforcing	106.9	78.4	92.7	102.2	78.4	90.3	107.3	78.3	92.8	102.0	77.0	89.5	106.8	78.3	92.6
0330	Cast-in-Place Concrete	100.6	78.8	91.5	100.5	78.6	91.4	111.4	78.1	97.5	96.6	58.5	80.8	100.6	78.7	91.5
03	CONCRETE	120.6	77.9	99.6	113.8	77.8	96.0	114.1	77.4	96.0	99.9	72.2	86.3	111.6	77.7	94.9
04	MASONRY	97.5	72.9	82.3	110.3	72.9	87.2	129.6	72.7	94.4	104.6	49.7	70.6	103.9	72.7	84.6
05	METALS	96.9	81.8	92.2	97.7	81.2	92.6	98.4	80.5	92.9	98.9	78.5	92.6	96.0	80.8	91.3
06	WOOD, PLASTICS & COMPOSITES	89.1	79.1	83.4	86.2	79.0	82.1	100.4	79.1	88.4	88.4	84.9	86.4	90.2	79.2	84.0
07	THERMAL & MOISTURE PROTECTION	105.0	79.5	94.6	105.3	74.2	92.7	104.1	68.8	89.8	104.3	65.0	88.3	105.1	79.5	94.7
08	OPENINGS	104.3	80.8	98.7	101.4	80.7	96.5	105.0	80.8	99.3	101.4	83.9	97.3	105.5	80.8	99.7
0920	Plaster & Gypsum Board	111.5	78.6	89.1	95.8	78.6	84.1	123.4	78.6	92.9	96.5	84.6	88.4	75.0	78.6	77.4
0950, 0980	Ceilings & Acoustic Treatment	103.4	78.6	86.9	98.0	78.6	85.0	103.4	78.6	86.9	98.0	84.6	89.1	104.2	78.6	87.2
0960	Flooring	111.7	51.4	93.7	98.3	55.8	85.6	116.2	55.8	98.1	99.5	55.8	86.4	114.6	46.2	94.2
0970, 0990	Wall Finishes & Painting/Coating	112.9	54.7	77.9	100.8	68.0	81.1	112.9	68.0	85.9	100.8	25.6	55.6	113.0	24.1	59.6
09	FINISHES	109.9	69.8	87.5	101.3	72.6	85.3	110.8	72.0	89.2	100.1	70.7	83.7	105.4	65.3	83.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	89.5	97.9	100.0	89.4	97.9	100.0	89.5	97.9	100.0	90.0	98.0	100.0	89.8	98.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	84.8	91.0	95.2	77.0	87.9	100.0	84.3	93.7	100.1	77.5	91.0	95.2	84.8	91.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.5	71.1	81.8	97.2	85.1	90.9	95.9	55.1	74.6	96.9	85.1	90.7	95.9	57.7	76.0
MF2010	WEIGHTED AVERAGE	102.2	79.3	92.2	100.6	79.6	91.4	104.4	76.7	92.4	99.7	76.1	89.4	101.2	76.5	90.5

City Cost Indexes

DIVISION		COLORADO			CONNECTICUT											
		SALIDA			BRIDGEPORT			BRISTOL			HARTFORD			MERIDEN		
		812			066			060			064			064		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	95.1	95.1		100.6	100.6		100.6	100.6		100.6	100.6		101.1	101.1	100.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	125.5	92.4	102.3	111.7	104.0	106.3	110.9	104.0	106.1	106.0	104.0	104.6	108.9	104.7	105.9
0310	Concrete Forming & Accessories	110.0	76.4	81.0	98.2	123.8	120.3	98.2	123.7	120.3	95.1	123.7	119.8	97.9	123.7	120.2
0320	Concrete Reinforcing	106.6	78.3	92.5	110.0	129.3	119.7	110.0	129.3	119.7	109.5	129.3	119.4	110.0	129.3	119.7
0330	Cast-in-Place Concrete	115.2	78.7	100.1	103.7	127.5	113.6	97.2	127.4	109.8	99.0	127.4	110.8	93.5	127.4	107.6
03	CONCRETE	112.8	77.7	95.5	105.3	125.7	115.4	102.2	125.7	113.8	102.8	125.8	114.1	100.5	125.7	112.9
04	MASONRY	131.2	72.7	95.0	98.1	134.8	120.8	90.8	134.8	118.0	94.7	134.8	119.5	90.4	134.8	117.9
05	METALS	95.7	80.8	91.1	102.0	125.1	109.1	102.0	125.1	109.1	107.8	125.1	113.1	99.5	125.1	107.4
06	WOOD, PLASTICS & COMPOSITES	97.4	79.2	87.2	99.1	122.9	112.5	99.1	122.9	112.5	92.6	122.9	109.7	99.1	122.9	112.5
07	THERMAL & MOISTURE PROTECTION	104.1	79.5	94.1	100.3	129.2	112.0	100.4	126.9	111.2	104.8	126.9	113.8	100.4	126.9	111.2
08	OPENINGS	98.5	80.8	94.3	107.0	132.2	113.0	107.0	132.2	113.0	106.1	132.2	112.2	109.4	132.2	114.8
0920	Plaster & Gypsum Board	75.4	78.6	77.5	99.9	123.0	115.6	99.9	123.0	115.6	95.4	123.0	114.2	101.5	123.0	116.1
0950, 0980	Ceilings & Acoustic Treatment	104.2	78.6	87.2	97.9	123.0	114.6	97.9	123.0	114.6	101.3	123.0	115.7	102.1	123.0	116.0
0960	Flooring	119.1	46.2	97.3	99.3	133.6	109.6	99.3	133.6	109.6	97.8	133.6	108.5	99.3	133.6	109.6
0970, 0990	Wall Finishes & Painting/Coating	113.0	24.1	59.6	96.4	122.3	112.0	96.4	122.3	112.0	97.3	122.3	112.3	96.4	122.3	112.0
09	FINISHES	105.6	65.3	83.2	100.8	125.1	114.4	100.8	125.1	114.4	99.7	125.1	113.8	101.9	125.1	114.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	89.9	98.0	100.0	110.4	102.1	100.0	110.5	102.1	100.0	110.5	102.1	100.0	110.5	102.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	72.6	86.1	100.0	116.0	106.4	100.0	116.0	106.4	100.0	116.0	106.4	95.1	116.0	103.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.1	74.2	84.7	99.2	108.7	104.2	99.2	111.3	105.5	98.6	112.3	105.7	99.2	111.3	105.5
MF2010	WEIGHTED AVERAGE	101.7	76.2	90.6	101.8	120.2	109.8	101.1	120.4	109.5	102.0	120.6	110.1	99.6	120.5	108.7

DIVISION		CONNECTICUT											
		NEW HAVEN			NEW LONDON			NORWALK			STAMFORD		
		069			064			068			069		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	101.1	101.1		101.1	101.1		100.6	100.6		100.6	100.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	110.9	104.7	106.5	103.1	104.7	104.2	111.5	104.0	106.2	112.2	104.0	106.4
0310	Concrete Forming & Accessories	98.0	123.7	120.2	97.9	123.7	120.2	98.2	124.2	120.6	98.2	124.2	120.7
0320	Concrete Reinforcing	110.0	129.3	119.7	86.3	129.3	107.7	110.0	129.4	119.7	110.0	129.4	119.7
0330	Cast-in-Place Concrete	100.5	127.4	111.7	85.7	127.4	103.0	102.0	128.9	113.2	103.7	128.9	114.2
03	CONCRETE	117.2	125.7	121.4	90.2	125.7	107.7	104.5	126.5	115.3	105.3	126.5	115.8
04	MASONRY	91.0	134.8	118.1	89.4	134.8	117.5	90.6	134.8	118.0	91.3	134.8	118.2
05	METALS	98.8	125.1	106.9	98.5	125.1	106.7	102.0	125.5	109.3	102.0	125.6	109.3
06	WOOD, PLASTICS & COMPOSITES	99.1	122.9	112.5	99.1	122.9	112.5	99.1	122.9	112.5	99.1	122.9	112.5
07	THERMAL & MOISTURE PROTECTION	100.5	126.7	111.1	100.4	126.9	111.1	100.4	129.4	112.2	100.4	129.4	112.2
08	OPENINGS	107.0	132.2	113.0	109.9	132.2	115.2	107.0	132.2	113.0	107.0	132.2	113.0
0920	Plaster & Gypsum Board	99.9	123.0	115.6	99.9	123.0	115.6	99.9	123.0	115.6	99.9	123.0	115.6
0950, 0980	Ceilings & Acoustic Treatment	97.9	123.0	114.6	95.9	123.0	113.9	97.9	123.0	114.6	97.9	123.0	114.6
0960	Flooring	99.3	133.6	109.6	99.3	133.6	109.6	99.3	133.6	109.6	99.3	133.6	109.6
0970, 0990	Wall Finishes & Painting/Coating	96.4	122.3	112.0	96.4	122.3	112.0	96.4	122.3	112.0	96.4	122.3	112.0
09	FINISHES	100.8	125.1	114.4	99.8	125.1	113.9	100.8	125.1	114.4	100.8	125.1	114.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	110.5	102.1	100.0	110.5	102.1	100.0	110.6	102.1	100.0	110.7	102.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	116.0	106.4	95.1	116.0	103.5	100.0	116.1	106.4	100.0	116.1	106.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.2	111.3	105.5	95.9	111.3	103.9	99.2	156.4	129.1	99.2	163.8	132.9
MF2010	WEIGHTED AVERAGE	102.2	120.5	110.2	97.7	120.5	107.6	101.4	126.9	112.5	101.5	127.9	113.0

DIVISION		D.C.			DELAWARE						FLORIDA					
		WASHINGTON			DOVER			NEWARK			WILMINGTON			DAYTONA BEACH		
		200 - 205			199			197			198			321		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	104.4	104.4		117.0	117.0		117.0	117.0		117.2	117.2		98.8	98.8	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	106.8	94.0	97.8	99.7	112.3	108.6	99.1	112.3	108.4	92.4	112.6	106.6	107.0	90.4	95.4
0310	Concrete Forming & Accessories	99.5	79.2	81.9	97.1	101.5	100.9	97.2	101.5	100.9	98.3	101.5	101.1	97.3	69.7	73.5
0320	Concrete Reinforcing	109.0	91.3	100.2	98.5	105.2	101.9	93.8	105.2	99.5	96.4	105.2	100.8	92.8	79.0	85.9
0330	Cast-in-Place Concrete	121.4	88.1	107.5	99.1	100.6	99.7	84.4	100.6	91.1	88.9	100.6	93.8	86.6	72.0	80.5
03	CONCRETE	109.6	85.8	97.9	99.9	102.8	101.3	92.1	102.8	97.4	94.8	102.8	98.7	88.2	73.4	80.9
04	MASONRY	95.9	80.0	86.1	103.3	97.2	99.5	99.9	97.2	98.2	103.6	97.2	99.6	92.3	66.8	76.5
05	METALS	100.1	107.3	102.3	103.1	117.0	107.4	103.7	117.0	107.8	102.9	117.0	107.3	96.4	92.8	95.3
06	WOOD, PLASTICS & COMPOSITES	103.5	77.2	88.7	95.0	101.1	98.4	97.6	101.1	99.6	98.2	101.1	99.8	99.7	70.8	83.4
07	THERMAL & MOISTURE PROTECTION	102.4	86.0	95.8	101.9	110.2	105.3	104.2	110.2	106.7	102.2	110.2	105.5	99.6	74.9	89.6
08	OPENINGS	100.3	87.6	97.3	94.3	110.5	98.1	93.4	110.5	97.4	96.6	110.5	99.9	98.9	69.1	91.8
0920	Plaster & Gypsum Board	105.8	76.5	85.9	105.9	101.0	102.6	103.4	101.0	101.8	104.8	101.0	102.2	95.1	70.3	78.3
0950, 0980	Ceilings & Acoustic Treatment	107.8	76.5	87.0	104.2	101.0	102.0	95.0	101.0	99.0	102.2	101.0	101.4	90.7	70.3	77.2
0960	Flooring	104.7	95.3	101.9	99.1	109.0	102.1	95.5	109.0	99.6	101.4	109.0	103.7	115.2	74.9	103.2
0970, 0990	Wall Finishes & Painting/Coating	104.6	84.0	92.2	97.3	105.3	102.1	99.5	105.3	103.0	97.3	105.3	102.1	99.4	75.7	85.2
09	FINISHES	101.6	81.7	90.5	101.4	102.8	102.2	97.4	102.8	100.4	102.0	102.8	102.4	100.8	70.9	84.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.4	99.7	100.0	89.7	97.9	100.0	89.7	97.9	100.0	89.7	97.9	100.0	83.5	96.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	92.9	97.2	100.0	115.8	106.3	100.2	115.8	106.5	100.2	115.8	106.4	100.0	77.8	91.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.7	102.6	102.6	95.2	109.0	102.4	97.7	109.0	103.6	96.6	109.0	103.1	94.4	56.2	74.5
MF2010	WEIGHTED AVERAGE	101.6	91.6	97.2	99.7	108.1	103.3	98.8	108.1	102.8	99.4	108.1	103.2	97.4	74.4	87.3

City Cost Indexes

DIVISION		FLORIDA																	
		FORT MYERS			GAINESVILLE			JACKSONVILLE			LAKELAND			MELBOURNE			MIAMI		
		339,341			326,344			320,322			338			329			330 - 332,340		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.8	98.8		98.8	98.8		98.8	98.8		98.8	98.8		98.8	93.8		91.7	91.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	104.3	89.5	93.9	115.4	89.5	97.2	107.0	89.8	94.9	106.2	89.9	94.7	113.9	89.7	96.9	96.7	78.1	83.6
0310	Concrete Forming & Accessories	91.1	76.6	78.6	92.3	55.5	60.5	97.1	55.9	61.5	87.4	77.1	78.5	93.5	71.4	74.4	100.7	70.5	74.6
0320	Concrete Reinforcing	90.8	95.7	93.3	98.5	66.9	82.7	92.8	67.0	79.9	93.1	96.6	94.8	93.9	79.0	86.5	95.9	74.5	85.2
0330	Cast-in-Place Concrete	94.8	69.4	84.3	99.4	63.6	84.5	87.4	69.5	80.0	97.0	70.8	86.1	104.3	74.3	91.9	91.7	79.4	86.6
03	CONCRETE	91.3	78.6	85.1	98.7	62.0	80.6	88.6	64.2	76.6	93.0	79.5	86.3	99.0	75.0	87.1	92.4	75.5	84.0
04	MASONRY	84.1	62.9	71.0	106.7	62.3	79.2	92.3	62.3	73.7	100.3	77.1	85.9	91.2	71.0	78.7	90.3	73.2	79.7
05	METALS	97.6	98.6	97.9	95.3	86.6	92.7	95.0	87.0	92.5	97.5	99.5	98.1	104.4	93.0	100.9	95.9	90.3	94.1
06	WOOD, PLASTICS & COMPOSITES	92.5	79.2	85.0	93.2	53.0	70.5	99.7	53.0	73.4	87.5	79.2	82.8	94.9	70.8	81.3	103.4	68.7	83.8
07	THERMAL & MOISTURE PROTECTION	96.8	81.3	90.5	99.9	62.5	84.7	99.8	63.1	84.9	96.7	86.0	92.4	100.0	77.3	90.8	98.1	76.5	89.4
08	OPENINGS	97.9	76.2	92.8	97.1	54.0	86.9	98.9	57.2	89.0	97.9	76.9	92.9	98.1	72.4	92.0	99.1	67.0	91.5
0920	Plaster & Gypsum Board	93.9	79.0	83.8	90.8	51.9	64.4	95.1	51.9	65.8	90.5	79.0	82.7	90.8	70.3	76.9	96.2	68.2	77.1
0950, 0980	Ceilings & Acoustic Treatment	85.8	79.0	81.3	86.1	51.9	63.4	90.7	51.9	64.9	85.8	79.0	81.3	88.1	70.3	76.3	95.9	68.2	77.4
0960	Flooring	112.1	56.1	95.4	112.6	43.9	92.1	115.2	65.7	100.4	109.8	57.6	94.2	112.8	74.9	101.5	118.5	74.3	105.3
0970, 0990	Wall Finishes & Painting/Coating	101.6	62.1	77.8	99.4	62.1	77.0	99.4	66.3	79.5	101.6	62.1	77.8	99.4	93.9	96.1	93.5	71.7	80.4
09	FINISHES	98.9	71.5	83.6	99.4	52.9	73.5	100.9	57.7	76.8	97.9	71.8	83.3	99.6	73.9	85.3	101.9	70.8	84.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	74.6	94.9	100.0	81.9	96.4	100.0	81.4	96.3	100.0	74.6	94.9	100.0	84.9	97.0	100.0	87.1	97.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.4	65.7	84.7	98.8	65.5	85.5	100.0	65.5	86.2	97.4	82.5	91.5	100.0	79.9	92.0	100.0	67.9	87.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.7	64.3	78.9	94.7	73.5	83.6	94.1	63.7	78.2	92.8	63.1	77.3	95.7	69.5	82.0	96.6	75.5	85.6
MF2010	WEIGHTED AVERAGE	96.4	74.1	86.7	98.7	68.0	85.3	97.2	67.7	84.3	97.1	79.3	89.4	99.9	77.9	90.3	97.7	74.6	87.6

DIVISION		FLORIDA																	
		ORLANDO			PANAMA CITY			PENSACOLA			SARASOTA			ST. PETERSBURG			TALLAHASSEE		
		327 - 328,347			324			325			342			338			323		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.8	98.8		98.8	98.8		98.8	98.8		98.8	98.8		98.8	98.8		98.8	98.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	108.9	89.6	95.4	119.4	88.6	97.8	118.9	89.1	98.0	111.3	89.6	96.1	107.8	89.3	94.8	105.5	88.9	93.8
0310	Concrete Forming & Accessories	99.8	73.7	77.3	96.4	44.9	52.0	94.4	53.0	58.6	96.2	76.7	79.4	95.0	52.2	58.1	100.4	45.1	52.7
0320	Concrete Reinforcing	95.9	76.2	86.1	97.0	74.9	85.9	99.4	75.4	87.4	92.8	96.5	94.6	93.1	88.8	91.0	102.5	66.8	84.6
0330	Cast-in-Place Concrete	107.4	71.8	92.6	91.9	57.7	77.7	113.4	67.0	94.2	104.0	70.6	90.1	98.0	65.5	84.5	93.5	57.3	78.5
03	CONCRETE	99.0	74.6	86.9	96.8	56.7	77.0	106.3	63.6	85.2	97.2	79.2	88.3	94.6	65.2	80.1	94.3	55.2	75.0
04	MASONRY	97.1	66.8	78.4	97.0	48.1	66.7	114.9	55.4	78.1	92.6	77.1	83.0	138.8	49.9	83.8	93.8	54.8	69.6
05	METALS	95.2	91.3	94.0	96.2	88.2	93.7	97.3	89.6	94.9	99.8	99.1	99.6	98.4	94.6	97.2	93.2	86.2	91.1
06	WOOD, PLASTICS & COMPOSITES	99.3	76.9	86.7	98.5	42.7	67.0	96.1	52.7	71.6	99.4	79.2	88.0	97.4	51.3	71.4	98.3	42.3	66.7
07	THERMAL & MOISTURE PROTECTION	98.9	75.5	89.4	100.1	57.5	82.8	100.0	63.4	85.1	98.4	86.0	93.4	96.9	58.7	81.4	105.5	72.7	92.2
08	OPENINGS	100.0	70.9	93.1	96.8	47.6	85.1	96.7	58.3	87.6	99.6	76.0	94.0	97.9	62.4	89.5	102.0	48.5	89.3
0920	Plaster & Gypsum Board	99.8	76.7	84.0	93.7	41.4	58.1	94.8	51.7	65.5	95.7	79.0	84.3	96.5	50.2	65.0	105.5	40.9	61.6
0950, 0980	Ceilings & Acoustic Treatment	99.6	76.7	84.3	88.1	41.4	57.0	88.1	51.7	63.9	91.3	79.0	83.1	87.8	50.2	62.7	99.5	40.9	60.5
0960	Flooring	112.1	74.9	101.0	114.8	43.8	93.5	110.4	64.1	96.6	117.1	58.9	99.7	114.2	56.2	96.8	112.1	63.1	97.4
0970, 0990	Wall Finishes & Painting/Coating	96.2	71.7	81.5	99.4	66.3	79.5	99.4	66.3	79.5	102.2	62.1	78.1	101.6	62.1	77.8	96.4	66.3	78.3
09	FINISHES	103.1	74.1	86.9	101.3	45.8	70.4	99.8	55.7	75.3	102.6	72.0	85.6	100.4	52.9	74.0	103.5	49.3	73.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.2	96.8	100.0	47.4	89.5	100.0	47.5	89.5	100.0	74.6	94.9	100.0	57.3	91.4	100.0	67.6	93.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	57.8	83.1	100.0	53.4	81.3	100.0	53.6	81.4	99.9	64.1	85.5	100.0	59.7	83.9	100.0	39.8	75.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.9	61.4	79.3	93.1	60.7	76.2	97.0	56.8	76.0	95.7	63.0	78.6	92.8	63.0	77.3	99.2	60.8	79.1
MF2010	WEIGHTED AVERAGE	99.3	71.4	87.1	98.5	59.1	81.3	100.8	62.4	84.1	99.3	75.3	88.8	100.2	64.7	84.7	98.7	58.0	81.0

DIVISION		FLORIDA									GEORGIA											
		TAMPA			WEST PALM BEACH						ALBANY			ATHENS			ATLANTA			AUGUSTA		
		335 - 336,346			334,349						317,398			306			300 - 303,399			308 - 309		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL			
015433	CONTRACTOR EQUIPMENT		98.8	98.8		91.7	91.7		92.5	92.5		93.8	93.8		94.3	94.3		93.8	93.8			
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	108.3	89.8	95.3	90.5	78.4	82.0	96.0	79.8	84.6	93.9	93.2	93.4	90.8	94.7	93.5	87.9	92.9	91.4			
0310	Concrete Forming & Accessories	98.0	77.3	80.1	99.2	69.7	73.7	90.9	44.5	50.9	90.6	47.0	52.9	94.1	75.0	77.6	91.6	67.0	70.4			
0320	Concrete Reinforcing	89.8	96.6	93.2	92.3	74.2	83.3	89.6	81.4	85.5	98.6	80.4	89.5	97.9	82.4	90.2	99.0	74.1	86.6			
0330	Cast-in-Place Concrete	95.8	70.9	85.5	86.4	75.5	81.9	92.4	55.3	77.0	107.4	56.5	86.3	107.4	71.1	92.3	101.4	50.6	80.3			
03	CONCRETE	93.2	79.6	86.5	87.8	73.7	80.9	91.0	56.7	74.1	103.8	57.3	80.8	101.3	75.1	88.4	96.8	63.0	80.1			
04	MASONRY	90.9	77.1	82.4	89.5	67.7	76.0	93.8	49.9	66.6	77.7	54.7	63.5	90.9	66.9	76.1	91.2	44.0	62.0			
05	METALS	97.4	99.7	98.1	94.6	90.9	93.5	96.6	86.4	93.5	90.8	74.6	85.8	91.6	77.9	87.4	90.5	72.7	85.0			
06	WOOD, PLASTICS & COMPOSITES	101.7	79.2	89.0	101.3	68.7	82.9	93.0	38.9	62.5	90.3	41.9	63.0	94.4	77.5	84.9	91.7	72.6	80.9			
07	THERMAL & MOISTURE PROTECTION	97.1	86.0	92.6	96.7	71.4	86.4	96.5	61.4	82.3	93.6	53.8	77.5	93.5	73.0	85.2	93.3	58.1	79			

City Cost Indexes

DIVISION		GEORGIA																	
		COLUMBUS			DALTON			GAINESVILLE			MACON			SAVANNAH			STATESBORO		
		318 - 319			307			305			310 - 312			313 - 314			304		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	92.5	92.5		105.5	105.5		93.8	93.8		102.8	102.8		93.5	93.5		93.2	93.2	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	95.9	79.9	84.6	94.2	97.5	96.5	93.7	93.2	93.3	96.6	94.8	95.3	97.6	81.2	86.1	95.0	77.6	82.7
0310	Concrete Forming & Accessories	90.8	55.6	60.4	83.8	47.8	52.7	93.8	43.9	50.7	90.3	53.1	58.2	92.5	51.0	56.7	78.7	52.6	56.2
0320	Concrete Reinforcing	89.8	81.8	85.8	98.1	76.3	87.2	98.4	80.3	89.4	91.0	81.5	86.2	96.8	74.2	85.5	97.7	43.1	70.4
0330	Cast-in-Place Concrete	92.1	54.8	76.6	104.3	51.0	82.2	112.8	53.8	88.3	90.9	66.7	80.8	100.2	55.8	81.8	107.1	60.7	87.9
03	CONCRETE	90.8	61.5	76.4	102.9	55.8	79.7	105.7	54.9	80.6	90.4	64.4	77.6	95.9	58.4	77.4	103.2	55.3	79.5
04	MASONRY	93.7	56.2	70.5	78.8	37.3	53.2	86.3	55.1	67.0	105.6	45.3	68.3	90.3	51.4	66.2	80.2	41.3	56.1
05	METALS	96.1	87.5	93.5	91.6	84.3	89.3	90.0	73.8	85.0	92.2	87.1	90.6	93.3	83.8	90.3	95.0	74.0	88.5
06	WOOD, PLASTICS & COMPOSITES	93.0	53.3	70.6	74.1	48.5	59.7	94.2	38.8	62.9	101.2	52.4	73.7	105.9	47.0	72.7	67.6	55.1	60.6
07	THERMAL & MOISTURE PROTECTION	96.5	64.6	83.5	95.6	52.5	78.1	93.6	55.8	78.2	94.9	63.2	82.1	95.6	57.4	80.1	94.2	52.1	77.1
08	OPENINGS	98.8	60.2	89.6	91.2	50.7	81.6	90.4	40.9	78.7	97.6	53.7	87.2	103.0	49.6	90.4	92.2	41.6	80.2
0920	Plaster & Gypsum Board	100.1	52.3	67.6	84.0	47.3	59.0	99.1	37.2	57.0	105.5	51.3	68.6	98.1	45.8	62.5	84.1	54.1	63.7
0950, 0980	Ceilings & Acoustic Treatment	93.5	52.3	66.1	106.9	47.3	67.2	94.1	37.2	56.2	88.4	51.3	63.7	101.5	45.8	64.4	102.2	54.1	70.2
0960	Flooring	116.2	51.3	96.8	94.7	47.8	80.7	95.7	47.4	81.3	91.7	48.7	78.8	113.7	47.2	93.8	112.7	45.7	92.7
0970, 0990	Wall Finishes & Painting/Coating	97.6	67.9	79.7	87.3	61.1	71.5	96.1	46.9	66.6	99.8	53.9	72.2	96.0	59.5	74.1	94.0	40.1	61.6
09	FINISHES	101.5	54.7	75.4	101.7	48.1	71.9	94.0	42.6	65.3	89.7	51.0	68.2	101.7	49.9	72.9	104.7	50.1	74.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	81.9	96.4	100.0	23.4	84.6	100.0	40.5	88.1	100.0	80.3	96.1	100.0	80.0	96.0	100.0	44.7	88.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	64.7	85.8	95.2	58.2	80.4	95.1	71.0	85.5	100.0	68.2	87.2	100.0	62.9	85.2	95.7	58.0	80.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.2	71.3	83.2	109.8	69.3	88.7	99.5	71.2	84.7	95.2	62.7	78.2	101.0	58.7	78.9	99.6	58.7	78.3
MF2010	WEIGHTED AVERAGE	97.4	66.6	84.0	96.4	60.1	80.6	95.2	62.8	81.1	96.2	65.9	83.0	98.4	62.0	82.6	96.5	56.9	79.2

DIVISION		GEORGIA									HAWAII						IDAHO		
		VALDOSTA			WAYCROSS						HILO			HONOLULU			STATES & POSS., GUAM		
		316			315						967			968			969		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	92.5	92.5		92.5	92.5		98.6	98.6		98.6	98.6		98.6	98.6		162.1	162.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	104.6	79.9	87.3	101.5	78.6	85.4	126.9	106.4	112.5	136.4	106.4	115.3	165.7	103.6	122.1	82.4	97.1	92.7
0310	Concrete Forming & Accessories	81.4	45.0	50.0	83.1	66.3	68.6	108.1	135.3	131.5	119.2	135.3	133.1	110.3	64.7	70.9	100.7	79.2	82.2
0320	Concrete Reinforcing	91.7	78.8	85.3	91.7	75.0	83.3	109.0	121.6	115.3	116.9	121.6	119.2	188.7	31.1	110.0	101.9	81.2	91.6
0330	Cast-in-Place Concrete	90.5	56.5	76.4	102.2	49.0	80.1	186.3	126.3	161.4	153.8	126.3	142.4	161.5	106.6	138.7	91.1	89.4	90.4
03	CONCRETE	95.4	56.9	76.4	98.7	62.8	81.0	148.2	128.4	138.4	141.5	128.4	135.0	149.6	73.5	112.0	100.7	83.2	92.1
04	MASONRY	99.3	51.0	69.4	100.0	39.9	62.8	127.9	128.5	128.3	128.1	128.5	128.4	182.7	44.3	97.1	118.9	82.4	96.3
05	METALS	95.7	85.4	92.5	94.8	79.3	90.0	107.6	107.9	107.7	120.8	107.9	116.8	138.8	76.3	119.5	101.1	81.2	95.0
06	WOOD, PLASTICS & COMPOSITES	81.0	38.5	57.0	82.8	74.1	77.9	101.3	137.9	122.0	119.2	137.9	129.7	113.8	68.6	88.3	88.9	77.7	82.6
07	THERMAL & MOISTURE PROTECTION	96.7	63.3	83.1	96.5	51.2	78.1	108.0	124.8	114.8	123.3	124.8	123.9	124.5	67.7	101.5	95.0	81.2	89.4
08	OPENINGS	94.7	43.5	82.6	94.7	59.2	86.3	99.7	132.7	107.5	108.8	132.7	114.4	104.3	55.2	92.6	99.1	72.5	92.8
0920	Plaster & Gypsum Board	92.0	37.1	54.6	92.4	73.7	79.7	107.7	138.9	128.9	143.9	138.9	140.5	213.3	56.8	106.8	84.9	76.9	79.5
0950, 0980	Ceilings & Acoustic Treatment	90.8	37.1	55.1	88.9	73.7	78.8	121.3	138.9	133.0	132.4	138.9	136.7	240.6	56.8	118.3	107.2	76.9	87.0
0960	Flooring	110.1	48.7	91.7	111.2	30.4	87.1	125.5	138.2	129.3	144.2	138.2	142.4	147.9	47.2	117.8	95.5	85.2	92.4
0970, 0990	Wall Finishes & Painting/Coating	97.6	53.3	70.9	97.6	46.9	67.1	99.1	145.5	127.0	107.4	145.5	130.3	104.1	36.7	63.6	102.9	40.3	65.3
09	FINISHES	99.0	44.5	68.7	98.6	58.7	76.4	115.6	138.1	128.1	130.3	138.1	134.6	192.9	60.0	118.8	97.8	76.5	85.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.1	95.8	100.0	52.9	90.6	100.0	116.4	103.3	100.0	116.4	103.3	100.0	76.3	95.3	100.0	89.8	98.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	71.4	88.5	96.8	58.3	81.4	100.1	109.4	103.8	100.2	109.4	103.8	102.1	38.1	76.4	100.0	72.5	89.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.2	57.6	75.1	98.7	58.7	77.8	105.2	124.0	115.0	106.5	124.0	115.7	151.3	42.2	94.3	96.6	74.6	85.1
MF2010	WEIGHTED AVERAGE	97.5	62.6	82.3	97.3	60.7	81.3	110.4	121.0	115.0	114.9	121.0	117.6	131.2	58.9	99.7	99.8	79.4	90.9

DIVISION		IDAHO												ILLINOIS		
		COEUR D'ALENE			IDAHO FALLS			LEWISTON			POCATELLO			TWIN FALLS		
		834			834			835			832			833		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	92.5	92.5		97.9	97.9		92.5	92.5		97.9	97.9		97.9	97.9	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	79.9	92.3	88.6	80.3	96.9	91.9	86.3	93.1	91.1	83.1	97.1	92.9	89.4	98.0	95.5
0310	Concrete Forming & Accessories	113.8	82.2	86.5	94.9	79.0	81.1	118.9	83.1	88.0	100.9	78.9	81.9	101.8	56.0	62.3
0320	Concrete Reinforcing	109.5	96.9	103.2	103.9	81.0	92.4	109.5	97.1	103.3	102.3	81.2	91.8	104.2	81.0	92.6
0330	Cast-in-Place Concrete	98.5	86.4	93.5	86.8	75.0	81.9	102.3	86.8	95.9	93.7	89.2	91.8	96.1	64.4	82.9
03	CONCRETE	107.5	86.3	97.1	92.9	78.0	85.6	111.1	86.9	99.2	99.9	83.0	91.5	107.5	64.2	86.1
04	MASONRY	120.4	85.3	98.7	114.1	82.4	94.5	120.8	85.3	98.8	116.6	82.4	95.4	119.0	82.4	96.4
05	METALS	95.2	87.1	92.7	108.9	79.6	99.9	94.6	88.0	92.6	109.0	80.9	100.3	109.0	79.5	99.9
06	WOOD, PLASTICS & COMPOSITES	92.7	81.8	86.5	83.0	79.4	80.9	97.9	81.8	88.8	88.9	77.7	82.6	89.8	48.3	66.4
07	THERMAL & MOISTURE PROTECTION	147.5	81.5	120.7	94.6	71.7	85.3	147.7	81.5	120.8	95.0	73.9	86.4	95.7	75.2	87.4
08	OPENINGS	117.8	73.5	107.4	102.8	68.6	94.7	117.8	76.1	107.9	99.8	67.5	92.1	102.8	49.6	90.2
0920	Plaster & Gypsum Board	152.1	81.2	103.9	75.3	78.7	77.6	153.2	81.2	104.3	77.6	76.9	77.1	78.5	46.7	56.8
0950, 0980	Ceilings & Acoustic Treatment	138.9	81.2	100.5	105.1	78.7	87.5	138.9	81.2	100.5	113.1	76.9	89.0	107.8	46.7	67.1
0960	Flooring	137.5	46.7	110.3	95.7	43.9	80.2	140.2	92.5	126.0	98.7	85.2	94.6	99.7	43.9	83.0
0970, 0990	Wall Finishes & Painting/Coating	122.3	66.3	88.7	102.9	41.2	65.8	122.3	66.3	88.7	102.8	42.0	66.2			

City Cost Indexes

DIVISION		ILLINOIS														
		CARBONDALE			CENTRALIA			CHAMPAIGN			CHICAGO			DECATUR		
		629			628			618 - 619			606 - 608			625		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		107.7	107.7		107.7	107.7		102.1	102.1		93.9	93.9		102.1	102.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.2	98.6	99.0	100.5	99.2	99.6	105.2	98.4	100.4	105.3	95.4	98.4	92.2	98.6	96.7
0310	Concrete Forming & Accessories	95.5	107.9	106.2	97.4	114.8	112.4	91.6	117.1	113.7	96.6	159.8	151.1	97.7	116.9	114.2
0320	Concrete Reinforcing	89.8	100.4	95.1	89.8	113.3	101.5	95.8	105.1	100.5	95.5	163.2	129.3	87.9	105.9	96.9
0330	Cast-in-Place Concrete	91.8	101.1	95.7	92.3	118.5	103.2	114.4	109.2	112.2	103.4	149.6	122.6	100.2	111.9	105.1
03	CONCRETE	87.0	104.8	95.8	87.5	116.3	101.7	109.6	112.1	110.8	99.2	155.5	127.0	97.5	113.1	105.2
04	MASONRY	79.4	107.7	96.9	79.5	117.4	103.0	136.2	118.4	125.2	101.8	158.0	136.6	75.9	115.5	100.4
05	METALS	94.3	113.7	100.3	94.4	120.8	102.5	97.3	108.7	100.8	95.0	135.9	107.6	97.9	109.6	101.5
06	WOOD, PLASTICS & COMPOSITES	106.0	106.1	106.1	108.7	112.3	110.7	95.0	116.5	107.1	98.2	159.6	132.8	106.2	116.5	112.0
07	THERMAL & MOISTURE PROTECTION	98.0	101.6	99.5	98.0	112.3	103.8	100.9	114.5	106.5	99.2	147.5	118.8	104.0	109.6	106.3
08	OPENINGS	88.3	110.5	93.6	88.4	117.3	95.2	93.7	112.1	98.1	101.3	162.6	115.8	99.3	112.4	102.4
0920	Plaster & Gypsum Board	95.7	106.2	102.9	96.8	112.6	107.6	92.5	116.9	109.1	89.7	161.3	138.4	98.4	116.9	111.0
0950, 0980	Ceilings & Acoustic Treatment	96.2	106.2	102.9	96.2	112.6	107.1	94.3	116.9	109.4	101.5	161.3	141.3	102.4	116.9	112.1
0960	Flooring	121.3	122.4	121.6	122.3	117.9	120.9	100.7	122.4	107.1	93.1	150.7	110.3	108.6	118.8	111.7
0970, 0990	Wall Finishes & Painting/Coating	104.5	99.5	101.5	104.5	105.2	104.9	95.3	111.1	104.8	93.8	156.1	131.2	96.1	108.4	103.5
09	FINISHES	102.4	108.9	106.0	102.8	114.4	109.3	99.3	118.0	109.7	98.7	158.7	132.1	102.9	117.3	110.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	104.1	100.8	100.0	106.5	101.3	100.0	103.1	100.6	100.0	125.0	105.0	100.0	103.0	100.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.0	104.3	98.7	95.0	94.4	94.8	95.0	105.3	99.1	99.9	136.1	114.4	100.0	98.9	99.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.0	106.7	100.6	95.5	104.3	100.1	96.8	94.5	95.6	96.1	137.1	117.5	98.4	91.3	94.7
MF2010	WEIGHTED AVERAGE	93.9	106.2	99.2	94.1	108.4	100.4	100.2	108.0	103.6	98.9	141.9	117.6	98.2	105.9	101.6

DIVISION		ILLINOIS														
		EFFINGHAM			GALESBURG			JOLIET			KANKAKEE			LA SALLE		
		624			614			609			609			613		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		102.1	102.1		101.4	101.4		92.0	92.0		92.0	92.0		101.4	101.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.5	98.2	98.0	98.7	97.7	98.0	105.2	94.7	97.8	98.9	93.9	95.4	98.1	98.4	98.3
0310	Concrete Forming & Accessories	102.2	115.5	113.7	91.5	119.0	115.3	98.4	163.3	154.4	92.4	141.3	134.6	105.1	125.1	122.4
0320	Concrete Reinforcing	90.7	101.0	95.9	95.4	111.1	103.2	95.5	155.7	125.6	96.3	146.5	121.4	95.5	143.7	119.6
0330	Cast-in-Place Concrete	99.9	107.3	103.0	101.6	107.9	104.2	103.3	149.4	122.4	96.4	132.5	111.4	101.5	123.6	110.7
03	CONCRETE	98.4	109.9	104.1	100.1	113.7	106.8	99.3	155.5	127.1	93.7	138.2	115.6	100.9	127.9	114.3
04	MASONRY	83.8	107.6	98.5	113.5	119.7	117.4	105.0	151.1	133.5	101.3	139.8	125.1	113.5	125.6	121.0
05	METALS	95.1	106.1	98.5	97.3	112.8	102.1	92.9	130.6	104.6	92.9	124.7	102.7	97.4	130.3	107.5
06	WOOD, PLASTICS & COMPOSITES	108.8	116.5	113.1	94.8	118.2	108.0	99.7	164.8	136.4	92.8	140.7	119.8	110.0	123.5	117.6
07	THERMAL & MOISTURE PROTECTION	103.6	107.6	105.2	100.5	109.9	104.3	99.1	144.5	117.5	98.4	135.6	113.5	100.6	119.4	108.2
08	OPENINGS	93.8	111.2	97.9	93.1	112.2	97.6	99.0	163.5	114.2	91.9	147.0	105.0	93.1	128.3	101.5
0920	Plaster & Gypsum Board	98.3	116.9	111.0	92.5	118.7	110.3	86.7	166.8	141.2	84.1	142.0	123.5	99.2	124.2	116.2
0950, 0980	Ceilings & Acoustic Treatment	96.2	116.9	110.0	94.3	118.7	110.5	101.5	166.8	144.9	101.5	142.0	128.4	94.3	124.2	114.2
0960	Flooring	109.7	122.4	113.5	100.6	120.9	106.7	92.7	142.9	107.7	90.1	134.3	103.3	106.5	124.8	112.0
0970, 0990	Wall Finishes & Painting/Coating	96.1	104.2	101.0	95.3	96.0	95.7	92.0	151.4	127.7	92.0	127.8	113.5	95.3	127.8	114.8
09	FINISHES	101.9	116.8	110.2	98.6	117.8	109.3	98.1	160.0	132.6	96.6	137.1	119.2	101.2	124.7	114.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	71.7	94.3	100.0	103.8	100.8	100.0	125.4	105.1	100.0	117.6	103.5	100.0	104.4	100.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.1	103.5	98.4	95.0	105.7	99.3	100.0	132.7	113.1	95.1	126.6	107.7	95.0	124.8	107.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.0	106.6	101.6	94.5	87.3	90.7	95.4	141.2	119.3	90.1	140.4	116.4	91.6	140.4	117.1
MF2010	WEIGHTED AVERAGE	96.3	106.3	100.6	97.6	107.6	102.0	98.4	140.7	116.8	94.8	130.8	110.5	97.7	125.1	109.6

DIVISION		ILLINOIS														
		PEORIA			QUINCY			ROCK ISLAND			ROCKFORD			SOUTH SUBURBAN		
		615 - 616			623			612			610 - 611			605		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		101.4	101.4		102.1	102.1		101.4	101.4		101.4	101.4		92.0	92.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.2	97.8	98.2	96.3	98.1	97.6	96.8	96.8	96.8	98.5	98.8	98.7	104.4	93.7	96.8
0310	Concrete Forming & Accessories	94.5	119.9	116.4	100.0	113.8	111.9	93.2	101.3	100.2	98.9	130.1	125.8	97.8	153.4	145.8
0320	Concrete Reinforcing	92.9	111.2	102.0	90.4	105.6	98.0	95.4	104.2	99.8	87.8	138.2	113.0	95.5	157.3	126.4
0330	Cast-in-Place Concrete	98.5	116.0	105.8	100.0	104.2	101.8	99.4	98.4	99.0	100.9	126.4	111.5	103.4	143.5	120.0
03	CONCRETE	97.3	116.9	106.9	98.0	109.0	103.4	98.1	101.2	99.6	97.8	130.1	113.7	99.3	149.4	124.0
04	MASONRY	113.5	120.0	117.5	104.2	104.6	104.4	113.4	96.2	102.7	88.8	134.3	117.0	101.8	146.6	129.5
05	METALS	100.0	113.6	104.2	95.1	108.4	99.2	97.3	108.3	100.7	100.0	127.8	108.6	94.1	130.1	105.2
06	WOOD, PLASTICS & COMPOSITES	102.5	118.2	111.4	106.1	116.5	112.0	96.4	100.6	98.8	102.5	127.8	116.8	98.2	154.1	129.7
07	THERMAL & MOISTURE PROTECTION	101.2	113.8	106.3	103.6	104.1	103.8	100.4	98.5	99.7	103.5	128.4	113.6	99.5	140.8	116.3
08	OPENINGS	99.2	116.7	103.4	94.6	112.4	98.8	93.1	101.0	95.0	99.2	132.5	107.1	99.0	157.1	112.8
0920	Plaster & Gypsum Board	96.3	118.7	111.5	96.8	116.9	110.5	92.5	100.5	97.9	96.3	128.5	118.2	89.7	155.8	134.6
0950, 0980	Ceilings & Acoustic Treatment	100.5	118.7	112.6	96.2	116.9	110.0	94.3	100.5	98.4	100.5	128.5	119.2	101.5	155.8	137.6
0960	Flooring	103.8	120.9	108.9	108.6	110.1	109.1	101.7	107.5	103.4	103.8	124.8	110.1	93.1	142.9	108.0
0970, 0990	Wall Finishes & Painting/Coating	95.3	127.8	114.8	96.1	105.1	101.5	95.3	96.0	95.7	95.3	135.3	119.3	93.8	151.4	128.4
09	FINISHES	101.4	121.4	112.6	101.3	113.6	108.2	98.8	101.9	100.6	101.4	129.8	117.2	98.7	152.5	128.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	104.3	100.9	100.0	72.7	94.5	100.0	97.2	99.4	100.0	111.6	102.3	100.0	120.4	104.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.9	105.8	102.3	95.1	100.8	97.4	95.0	99.8	96.9	100.0	114.9	106.0	99.9	130.9	112.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.5	97.4	96.5	93.2	81.3	87.0	86.5	95.7	91.3	95.8	127.0	112.1	95.2	131.5	114.2
MF2010	WEIGHTED AVERAGE	99.9	110.4	104.5	96.9	101.6	99.0	96.6	99.8							

City Cost Indexes

DIVISION		INDIANA																	
		ANDERSON			BLOOMINGTON			COLUMBUS			EVANSVILLE			FORT WAYNE			GARY		
		460			474			472			476 - 477			467 - 468			463 - 464		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.7	96.7		87.2	87.2		87.2	87.2		116.1	116.1		96.7	96.7		96.7	96.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.5	96.0	94.4	82.7	94.8	91.2	79.4	94.6	90.1	87.8	123.5	112.9	91.5	96.0	94.6	91.0	99.2	96.8
0310	Concrete Forming & Accessories	98.8	80.8	83.3	101.9	81.1	83.9	95.9	78.9	81.2	95.4	81.9	83.7	97.1	75.4	78.3	98.9	115.2	113.0
0320	Concrete Reinforcing	98.0	83.7	90.9	87.1	83.4	85.2	87.5	83.4	85.4	95.4	76.7	86.1	98.0	76.8	87.4	98.0	110.1	104.0
0330	Cast-in-Place Concrete	104.8	78.1	93.7	100.8	78.0	91.3	100.4	72.5	88.8	96.3	87.7	92.8	111.3	83.7	99.9	109.5	112.4	110.7
03	CONCRETE	96.3	80.9	88.7	102.3	80.3	91.4	101.6	77.3	89.6	102.7	83.1	93.0	99.3	79.1	89.3	98.5	113.1	105.7
04	MASONRY	84.8	79.7	81.7	90.5	76.4	81.8	90.4	76.2	81.6	86.4	83.3	84.5	88.2	77.3	81.4	85.1	112.8	102.7
05	METALS	92.9	89.8	92.0	95.9	78.7	90.6	95.9	78.0	90.4	89.2	84.4	87.8	92.9	86.4	90.9	92.9	108.0	97.6
06	WOOD, PLASTICS & COMPOSITES	108.2	80.8	92.8	118.0	81.1	97.2	112.5	78.3	93.2	97.4	80.8	88.0	107.9	74.8	89.2	105.7	115.0	110.9
07	THERMAL & MOISTURE PROTECTION	105.4	77.1	93.9	95.3	79.7	88.9	94.9	79.4	88.6	99.3	84.7	93.4	105.2	79.0	94.6	104.0	109.0	106.0
08	OPENINGS	95.0	81.9	91.9	105.0	82.0	99.6	100.8	80.5	96.0	98.3	79.8	93.9	95.0	74.7	90.2	95.0	119.4	100.8
0920	Plaster & Gypsum Board	94.3	80.6	85.0	98.1	81.2	86.6	94.7	78.3	83.6	93.1	79.6	83.9	93.5	74.4	80.5	87.6	115.8	106.8
0950, 0980	Ceilings & Acoustic Treatment	89.6	80.6	83.7	83.9	81.2	82.1	83.9	78.3	80.2	88.8	79.6	82.7	89.6	74.4	79.5	89.6	115.8	107.1
0960	Flooring	99.9	86.6	96.0	105.8	76.4	97.0	101.4	76.4	93.9	100.8	82.2	95.2	99.9	80.2	94.0	99.9	123.6	107.0
0970, 0990	Wall Finishes & Painting/Coating	97.3	70.9	81.4	89.6	83.0	85.7	89.6	83.0	85.7	94.7	86.7	89.9	97.3	74.4	83.5	97.3	126.6	114.9
09	FINISHES	95.0	80.9	87.1	96.2	80.4	87.4	94.5	78.7	85.7	95.2	82.4	88.1	94.8	76.1	84.4	94.0	118.3	107.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	91.5	98.3	100.0	89.1	97.8	100.0	88.7	97.7	100.0	94.1	98.8	100.0	89.5	97.9	100.0	105.3	101.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	75.8	90.3	99.8	79.0	91.4	94.9	79.0	88.5	100.0	80.2	92.0	100.0	72.4	88.9	100.0	105.9	102.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	85.9	88.4	87.2	98.2	83.5	90.5	97.3	85.2	91.0	94.5	86.3	90.2	86.6	78.4	82.3	97.7	110.2	104.2
MF2010	WEIGHTED AVERAGE	95.5	83.1	90.1	98.7	81.5	91.2	96.6	80.9	89.7	96.5	86.6	92.1	96.0	79.2	88.7	96.8	110.1	102.6

DIVISION		INDIANA																	
		INDIANAPOLIS			KOKOMO			LAFAYETTE			LAWRENCEBURG			MUNCIE			NEW ALBANY		
		461 - 462			469			470			470			473			471		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		93.3	93.3		96.7	96.7		87.2	87.2		105.0	105.0		96.7	96.7		95.1	95.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.3	99.3	96.6	87.1	95.8	93.2	80.2	94.5	90.3	78.0	111.0	101.2	82.5	95.0	91.3	75.3	97.4	90.8
0310	Concrete Forming & Accessories	98.0	85.1	86.9	102.4	77.8	81.2	93.5	82.8	84.3	92.4	77.2	79.3	93.5	80.5	82.3	90.2	75.1	77.2
0320	Concrete Reinforcing	100.0	85.4	92.7	88.7	83.7	86.2	87.1	83.6	85.4	86.3	76.6	81.5	96.3	83.6	90.0	87.7	79.6	83.6
0330	Cast-in-Place Concrete	103.3	84.7	95.6	103.7	81.0	94.3	100.9	80.7	92.5	94.4	76.6	87.0	105.9	77.7	94.2	97.4	75.7	88.4
03	CONCRETE	99.5	84.8	92.3	93.1	80.5	86.9	101.8	81.9	92.0	95.0	77.4	86.3	101.1	80.6	91.0	100.2	76.5	88.5
04	MASONRY	90.3	81.3	84.7	84.4	80.0	81.7	95.5	79.8	85.8	75.6	76.0	75.9	92.4	79.8	84.6	82.3	69.5	74.4
05	METALS	93.6	81.7	89.9	89.5	89.3	89.4	94.3	78.6	89.5	91.1	85.2	89.3	97.7	89.9	95.3	93.0	82.7	89.8
06	WOOD, PLASTICS & COMPOSITES	105.3	85.3	94.0	111.6	76.6	91.9	109.5	83.2	94.7	95.8	77.0	85.2	111.4	80.6	94.0	97.9	76.0	85.5
07	THERMAL & MOISTURE PROTECTION	100.9	82.6	93.5	105.0	77.1	93.7	94.9	81.5	89.5	99.2	78.3	90.7	97.9	78.0	89.8	86.8	71.4	80.6
08	OPENINGS	103.1	84.8	98.8	90.0	79.6	87.5	99.2	83.1	95.4	100.4	76.8	94.8	98.5	81.7	94.5	97.9	78.2	93.2
0920	Plaster & Gypsum Board	88.5	85.1	86.2	99.8	76.3	83.8	91.8	83.3	86.0	72.6	76.8	75.5	93.1	80.6	84.6	91.2	75.6	80.6
0950, 0980	Ceilings & Acoustic Treatment	91.3	85.1	87.2	89.6	76.3	80.8	79.4	83.3	82.0	93.2	76.8	82.3	84.8	80.6	82.0	88.8	75.6	80.0
0960	Flooring	101.7	86.6	97.2	103.6	89.9	99.5	100.4	88.1	96.8	74.8	86.6	78.3	100.7	86.6	96.5	98.3	64.0	88.1
0970, 0990	Wall Finishes & Painting/Coating	99.5	83.0	89.6	97.3	73.3	82.9	89.6	95.1	92.9	90.6	73.2	80.1	89.6	70.9	78.4	94.7	84.5	88.6
09	FINISHES	95.4	85.4	89.8	96.6	79.3	87.0	92.9	85.2	88.6	85.8	78.9	82.0	94.0	80.7	86.6	94.5	74.3	83.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.0	98.6	100.0	89.1	97.8	100.0	91.3	98.3	100.0	44.9	89.0	100.0	90.9	98.2	100.0	44.3	88.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.9	80.1	92.0	95.1	79.2	88.7	94.9	80.2	89.0	95.6	75.7	87.6	99.8	75.8	90.2	95.1	76.9	87.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.7	88.3	94.2	90.4	78.8	84.4	96.8	82.6	89.4	92.3	75.3	83.4	90.2	80.3	85.0	92.8	77.6	84.9
MF2010	WEIGHTED AVERAGE	98.3	85.1	92.6	93.3	82.0	88.4	96.3	82.9	90.5	93.3	79.3	87.2	97.3	81.8	90.6	94.4	77.0	86.8

DIVISION		INDIANA									IOWA								
		SOUTH BEND			TERRE HAUTE			WASHINGTON			BURLINGTON			CARROLL			CEDAR RAPIDS		
		465 - 466			470			475			526			514			522 - 524		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		105.0	105.0		116.1	116.1		116.1	116.1		100.2	100.2		100.2	100.2		96.8	96.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	92.9	95.9	95.0	89.7	124.2	113.9	89.2	121.5	111.9	96.5	97.3	97.1	85.8	97.3	93.9	98.5	96.0	96.8
0310	Concrete Forming & Accessories	102.6	79.8	82.9	96.3	78.1	80.6	97.1	80.6	82.9	97.3	77.3	80.1	85.2	51.6	56.2	103.2	81.0	84.1
0320	Concrete Reinforcing	101.1	79.1	90.1	95.4	83.8	89.6	88.2	50.3	69.3	94.3	85.4	89.9	95.1	81.1	88.1	95.1	86.8	90.9
0330	Cast-in-Place Concrete	96.3	80.7	89.8	93.3	87.0	90.7	101.5	86.6	95.3	109.6	56.3	87.5	109.6	61.0	89.4	109.9	81.3	98.0
03	CONCRETE	90.8	81.3	86.1	105.6	82.6	94.2	111.1	77.1	94.3	101.7	72.5	87.3	100.5	61.7	81.3	101.8	82.8	92.4
04	MASONRY	90.7	79.1	83.5	93.6	80.5	85.5	86.4	82.3	83.9	97.2	66.0	77.9	99.0	73.5	83.2	102.8	77.5	87.1
05	METALS	93.0	99.8	95.1	89.9	88.1	89.4	84.7	69.6	80.0	87.0	94.9	89.4	87.0	90.4	88.1	89.3	93.8	90.7
06	WOOD, PLASTICS & COMPOSITES	105.0	79.2	90.4	99.5	76.4	86.5	100.0	80.7	89.1	95.3	78.4	85.7	81.8	45.9	61.6	101.8	80.5	89.8
07	THERMAL & MOISTURE PROTECTION	97.5	81.9	91.2	99.4	81.9	92.3	99.5	84.4	93.4	103.8	75.6	92.4	104.1	70.5	90.5	104.7	79.9	94.6
08	OPENINGS	91.0	78.9	88.1	98.9	79.4	94.3	95.6	69.2	89.3	92.4	72.1	87.6	96.6	54.7	86.7	97.6	81.7	93.8
0920	Plaster & Gypsum Board	87.0	78.9	81.5	93.1	75.0	80.8	93.0	79.5	83.8	100.7	77.7	85.1	95.9	44.3	60.8	105.3	80.1	88.2

City Cost Indexes

DIVISION		IOWA																	
		COUNCIL BLUFFS			CRESTON			DAVENPORT			DECORAH			DES MOINES			DUBUQUE		
		515			508			527 - 528			521			500 - 503, 509			520		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	96.3	96.3		100.2	100.2		100.2	100.2		100.2	100.2		101.8	101.8		95.7	95.7	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.6	92.3	95.7	86.7	96.4	93.5	96.8	99.3	98.6	95.1	96.3	95.9	95.5	99.7	98.5	96.4	93.3	94.2
0310	Concrete Forming & Accessories	84.6	70.7	72.6	84.5	67.2	69.6	102.5	91.2	92.7	94.9	46.5	53.1	103.2	78.9	82.2	85.9	73.8	75.4
0320	Concrete Reinforcing	97.0	79.3	88.2	93.3	81.2	87.3	95.1	100.0	97.5	94.3	79.0	86.7	102.7	81.4	92.0	93.7	86.6	90.2
0330	Cast-in-Place Concrete	114.3	75.1	98.0	102.1	65.4	86.9	105.9	91.7	100.0	106.7	59.3	87.0	89.8	88.0	89.1	107.6	100.4	104.6
03	CONCRETE	104.1	74.7	89.6	96.9	70.2	83.7	99.9	93.5	96.7	99.6	58.4	79.3	95.0	83.2	89.2	98.6	86.2	92.4
04	MASONRY	104.5	75.9	86.8	96.9	81.4	87.3	100.0	85.5	91.1	117.7	72.7	89.8	90.7	80.4	84.3	103.7	73.7	85.1
05	METALS	94.3	90.2	93.1	89.4	90.6	89.8	89.3	103.9	98.8	87.1	87.7	87.3	95.2	92.9	94.5	88.0	93.5	89.7
06	WOOD, PLASTICS & COMPOSITES	80.6	69.7	74.4	79.1	63.1	70.1	101.9	90.3	95.3	92.3	37.9	61.6	98.8	77.4	86.8	82.2	71.7	76.3
07	THERMAL & MOISTURE PROTECTION	104.2	68.4	89.6	106.2	78.8	95.1	104.2	87.4	97.4	104.0	54.7	84.0	100.6	79.5	92.0	104.4	71.3	91.0
08	OPENINGS	96.6	75.5	91.6	106.6	64.4	96.6	97.6	91.4	96.1	95.2	49.8	84.5	101.9	82.8	97.4	96.6	79.3	92.5
0920	Plaster & Gypsum Board	95.9	69.0	77.6	94.1	62.0	72.2	105.3	90.0	94.9	99.6	36.0	56.4	91.9	76.8	81.6	95.9	71.1	79.0
0950, 0980	Ceilings & Acoustic Treatment	110.6	69.0	82.9	111.5	62.0	78.5	114.1	90.0	98.1	110.6	36.0	61.0	115.0	76.8	89.6	110.6	71.1	84.3
0960	Flooring	104.3	82.1	97.6	104.2	33.8	83.2	113.5	98.7	109.1	111.1	48.0	92.2	109.4	87.6	102.9	118.8	77.6	106.5
0970, 0990	Wall Finishes & Painting/Coating	95.3	66.9	78.2	95.8	79.9	86.3	99.0	97.6	98.1	99.0	33.6	59.7	91.2	79.9	84.4	99.4	65.1	78.8
09	FINISHES	104.1	72.0	86.2	102.4	61.5	79.6	109.1	93.2	100.2	106.9	43.6	71.6	105.5	80.4	91.5	108.4	72.9	88.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	88.9	97.8	100.0	71.4	94.3	100.0	93.1	98.6	100.0	85.2	97.0	100.0	90.3	98.1	100.0	88.6	97.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	75.8	90.4	95.3	80.3	89.2	100.2	93.2	97.4	95.3	74.5	86.9	100.0	79.8	91.9	100.2	75.4	90.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	103.7	81.6	92.1	94.8	81.3	87.8	95.5	91.2	93.2	98.1	45.4	70.6	106.9	81.3	93.6	102.2	78.4	89.8
MF2010	WEIGHTED AVERAGE	100.2	78.8	90.9	96.7	77.9	88.5	98.4	93.4	96.2	97.4	65.6	83.5	99.4	83.9	92.7	98.5	80.4	90.6
DIVISION		IOWA																	
		FORT DODGE			MASON CITY			OTTUMWA			SHENANDOAH			SIBLEY			SIOUX CITY		
		505			504			525			516			512			510 - 511		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.2	100.2		100.2	100.2		95.7	95.7		96.3	96.3		100.2	100.2		100.2	100.2	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	94.6	95.0	94.9	94.6	96.2	95.8	96.8	91.4	93.0	102.0	91.4	94.6	106.0	95.0	98.3	107.6	95.8	99.3
0310	Concrete Forming & Accessories	85.1	46.0	51.3	89.6	46.4	52.3	92.9	71.9	74.8	86.2	57.8	61.7	86.6	38.7	45.3	103.2	67.9	72.7
0320	Concrete Reinforcing	93.3	67.4	80.4	93.2	80.6	86.9	94.3	85.6	90.0	97.0	68.6	82.8	97.0	67.3	82.2	95.1	78.2	86.7
0330	Cast-in-Place Concrete	95.8	45.0	74.7	95.8	58.7	80.4	110.3	54.8	87.3	110.5	61.1	90.0	108.3	45.7	82.3	109.0	56.7	87.3
03	CONCRETE	92.6	51.1	72.1	92.9	58.5	75.9	101.2	69.4	85.5	101.5	62.1	82.1	100.5	48.1	74.6	101.2	66.9	84.3
04	MASONRY	95.9	38.5	60.4	108.7	69.4	84.4	100.3	57.1	73.6	104.0	75.9	86.6	122.1	38.8	70.6	97.2	55.6	71.4
05	METALS	89.5	81.9	87.2	89.5	88.8	89.3	86.9	92.0	88.5	93.3	84.3	90.5	87.2	81.4	85.4	89.3	88.2	89.0
06	WOOD, PLASTICS & COMPOSITES	79.6	46.2	60.8	83.9	37.9	58.0	89.4	78.2	83.1	82.2	54.0	66.3	83.1	36.7	56.9	101.8	68.2	82.9
07	THERMAL & MOISTURE PROTECTION	105.6	58.5	86.5	105.2	64.6	88.7	104.6	65.2	88.6	103.5	66.6	88.5	103.8	49.2	81.6	104.3	64.9	88.3
08	OPENINGS	100.8	50.1	88.8	93.3	50.2	83.1	96.6	76.2	91.8	88.1	55.5	80.4	93.4	44.9	81.9	97.6	66.9	90.3
0920	Plaster & Gypsum Board	94.1	44.6	60.4	94.1	36.0	54.6	97.0	77.7	83.9	95.9	52.8	66.6	95.9	34.7	54.3	105.3	67.2	79.4
0950, 0980	Ceilings & Acoustic Treatment	111.5	44.6	67.0	111.5	36.0	61.3	110.6	77.7	88.7	110.6	52.8	72.1	110.6	34.7	60.1	114.1	67.2	82.9
0960	Flooring	105.8	48.0	88.5	107.9	48.0	90.0	121.8	51.1	100.6	104.9	34.9	84.0	106.4	34.6	85.0	113.6	54.7	96.0
0970, 0990	Wall Finishes & Painting/Coating	95.8	63.1	76.1	95.8	30.7	56.7	99.4	79.9	87.7	95.3	66.9	78.2	99.0	63.1	77.4	99.0	63.1	77.4
09	FINISHES	104.4	47.1	72.5	105.0	42.9	70.4	109.5	69.2	87.0	104.2	53.4	75.9	106.7	38.9	68.9	110.7	64.8	85.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.8	96.0	100.0	84.8	97.0	100.0	84.2	96.8	100.0	67.9	93.6	100.0	78.9	95.8	100.0	86.9	97.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.3	65.8	83.4	95.3	71.9	85.9	95.3	71.3	85.7	95.3	75.1	87.2	95.3	69.5	84.9	100.2	76.3	90.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.9	42.9	71.1	100.9	57.0	77.9	100.5	67.8	83.4	98.1	80.6	89.0	98.1	42.4	69.1	98.2	74.7	85.9
MF2010	WEIGHTED AVERAGE	96.6	58.8	80.2	96.5	66.6	83.5	97.3	73.0	86.7	97.1	72.1	86.2	97.7	57.5	80.2	99.1	73.6	88.0
DIVISION		IOWA									KANSAS								
		SPENCER			WATERLOO			BELLEVILLE			COLBY			DODGE CITY			EMPORIA		
		513			506 - 507			669			677			678			668		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.2	100.2		100.2	100.2		103.1	103.1		103.1	103.1		103.1	103.1		101.4	101.4	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	106.1	95.0	98.3	99.5	96.1	97.1	111.0	94.7	99.5	109.4	94.8	99.1	111.9	94.5	99.7	102.8	92.2	95.3
0310	Concrete Forming & Accessories	92.8	38.7	46.1	101.6	48.1	55.4	95.0	55.3	60.7	102.2	59.6	65.4	95.3	59.5	64.4	86.5	66.7	69.4
0320	Concrete Reinforcing	97.0	67.3	82.2	94.0	86.5	90.2	99.6	56.1	77.9	101.2	56.1	78.7	98.8	56.1	77.5	98.2	56.7	77.5
0330	Cast-in-Place Concrete	108.3	45.7	82.3	102.6	55.0	82.9	118.9	56.9	93.2	114.3	57.0	90.6	116.4	56.7	91.6	114.9	54.8	90.0
03	CONCRETE	100.9	48.1	74.9	98.4	59.1	79.0	117.7	57.4	88.0	114.9	59.3	87.5	116.2	59.1	88.0	110.0	61.8	86.2
04	MASONRY	122.1	38.8	70.6	96.6	73.0	82.0	94.9	59.8	73.2	96.9	59.8	73.9	104.4	60.0	76.9	100.5	68.4	80.7
05	METALS	87.1	81.4	85.4	91.8	92.8	92.1	97.8	78.4	91.9	98.2	78.7	92.2	99.7	77.8	92.9	97.6	79.9	92.1
06	WOOD, PLASTICS & COMPOSITES	89.3	36.7	59.6	98.6	37.9	64.4	96.4	53.3	72.1	103.9	59.2	78.7	95.3	59.2	74.9	87.7	68.2	76.7
07	THERMAL & MOISTURE PROTECTION	104.6	49.2	82.1	105.4	71.4	91.6	98.4	62.3	83.7	101.9	62.9	86.1	101.9	62.3	85.8	97.0	77.4	89.1
08	OPENINGS	104.3	44.9	90.2	94.2	53.5	84.5	96.4	49.4	85.3	99.5	52.6	88.4	99.5	52.6	88.4	94.4	57.5	85.6
0920	Plaster & Gypsum Board	97.0	34.7	54.7	103.9	36.0	57.7	98.0	51.8	66.6	100.7	57.9	71.6	94.8	57.9	69.7	95.1	67.1	76.0
0950, 0980	Ceilings & Acoustic Treatment	110.6	34.7	60.1	115.0	36.0	62.5	91.6	51.8	65.1	94.								

City Cost Indexes

DIVISION		KANSAS																	
		FORT SCOTT			HAYS			HUTCHINSON			INDEPENDENCE			KANSAS CITY			LIBERAL		
		667			676			675			673			660 - 662			679		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	102.3	102.3		103.1	103.1		103.1	103.1		103.1	103.1		99.7	99.7		103.1	103.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.4	93.0	94.9	115.5	94.8	100.9	93.4	94.6	94.3	113.1	94.6	100.1	93.5	92.9	93.1	115.2	94.6	100.7
0310	Concrete Forming & Accessories	102.6	78.6	81.9	99.7	59.6	65.1	89.9	59.5	63.6	110.8	67.8	73.7	99.3	96.3	96.7	95.8	59.5	64.5
0320	Concrete Reinforcing	97.5	96.3	96.9	98.8	56.1	77.5	98.8	56.1	77.5	98.2	63.0	80.6	94.6	97.8	96.2	100.2	56.1	78.2
0330	Cast-in-Place Concrete	106.6	55.7	85.5	90.2	57.0	76.5	83.6	54.2	71.4	116.8	54.5	91.0	91.4	99.3	94.7	90.3	54.2	75.3
03	CONCRETE	105.2	74.6	90.1	106.7	59.3	83.3	89.1	58.3	73.9	117.4	63.3	90.7	97.3	97.9	97.6	108.9	58.3	83.9
04	MASONRY	101.0	61.4	76.5	104.3	59.8	76.8	96.4	59.6	73.6	94.0	65.7	76.5	103.6	99.5	101.1	102.4	59.6	75.9
05	METALS	97.5	94.4	96.5	97.8	78.7	91.9	97.6	77.7	91.5	97.5	81.3	92.5	104.9	100.6	103.5	98.1	77.7	91.8
06	WOOD, PLASTICS & COMPOSITES	106.5	85.4	94.6	100.6	59.2	77.2	89.9	59.2	72.6	114.7	69.6	89.3	102.4	96.7	99.1	95.9	59.2	75.2
07	THERMAL & MOISTURE PROTECTION	97.8	82.8	91.7	102.1	62.9	86.2	100.9	62.2	85.2	101.9	82.4	94.0	97.5	99.8	98.4	102.3	62.2	86.0
08	OPENINGS	94.4	80.1	91.0	99.4	52.6	88.3	99.4	52.6	88.3	97.2	59.8	88.4	95.6	90.5	94.4	99.5	52.6	88.4
0920	Plaster & Gypsum Board	100.6	84.9	89.9	98.1	57.9	70.7	93.6	57.9	69.3	107.8	68.6	81.1	93.5	96.5	95.5	95.5	57.9	69.9
0950, 0980	Ceilings & Acoustic Treatment	91.6	84.9	87.2	94.3	57.9	70.1	94.3	57.9	70.1	94.3	68.6	77.2	91.6	96.5	94.9	94.3	57.9	70.1
0960	Flooring	117.6	40.1	94.4	104.7	39.9	85.3	99.5	39.9	81.7	109.9	39.9	89.0	93.5	100.5	95.6	102.4	39.9	83.7
0970, 0990	Wall Finishes & Painting/Coating	99.2	39.8	63.5	97.4	39.8	62.8	97.4	39.8	62.8	97.4	39.8	62.8	105.6	69.2	83.7	97.4	39.8	62.8
09	FINISHES	104.0	68.4	84.2	101.4	53.9	74.9	97.3	53.9	73.1	103.8	60.0	79.4	98.5	93.1	95.4	100.7	53.9	74.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	47.4	89.5	100.0	42.5	88.5	100.0	42.5	88.5	100.0	43.7	88.7	100.0	63.5	92.7	100.0	42.5	88.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.1	69.3	84.7	95.1	68.7	84.5	95.1	68.7	84.5	95.1	71.1	85.5	99.9	96.8	98.6	95.1	68.7	84.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.1	73.1	81.2	96.8	66.0	80.7	91.7	66.0	78.3	94.0	73.1	83.0	95.5	97.3	96.4	94.7	73.4	83.6
MF2010	WEIGHTED AVERAGE	97.7	74.3	87.5	99.6	65.6	84.8	95.8	65.4	82.5	99.9	70.3	87.0	99.4	95.7	97.7	99.5	66.4	85.1

DIVISION		KANSAS									KENTUCKY								
		SALINA			TOPEKA						WICHITA			ASHLAND			BOWLING GREEN		
		674			664 - 666			670 - 672			411 - 412			421 - 422			413 - 414		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	103.1	103.1		101.4	101.4		103.1	103.1		98.0	98.0		95.1	95.1		101.5	101.5	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	102.2	94.8	97.0	97.9	91.2	93.2	98.7	93.3	94.9	108.9	87.0	93.5	75.6	97.7	91.1	83.8	98.8	94.3
0310	Concrete Forming & Accessories	91.8	55.7	60.6	97.2	41.8	49.4	97.8	51.7	58.0	89.0	105.7	103.4	86.5	84.0	84.4	90.4	84.6	85.4
0320	Concrete Reinforcing	98.2	62.6	80.4	97.7	97.2	97.5	97.5	75.8	86.7	89.1	106.1	97.6	86.4	89.5	88.0	87.3	105.0	96.1
0330	Cast-in-Place Concrete	101.0	54.7	81.8	96.1	46.5	75.6	94.7	52.7	77.3	88.7	102.9	94.6	88.0	97.5	91.9	98.1	75.2	88.6
03	CONCRETE	103.0	58.0	80.8	98.3	55.4	77.1	97.6	57.8	78.0	96.1	105.2	100.6	94.4	89.7	92.1	98.2	85.2	91.8
04	MASONRY	118.4	59.8	82.1	97.6	56.9	72.4	94.9	51.1	67.8	92.2	105.1	100.2	94.0	81.6	86.3	91.6	70.2	78.4
05	METALS	99.5	81.5	93.9	101.6	96.4	100.0	101.6	83.7	96.1	92.1	109.8	97.6	93.7	86.9	91.6	93.0	93.7	93.2
06	WOOD, PLASTICS & COMPOSITES	91.5	53.3	70.0	95.4	38.1	63.1	95.3	52.5	71.2	79.0	105.4	93.9	92.3	83.9	87.5	90.8	91.1	90.9
07	THERMAL & MOISTURE PROTECTION	101.4	62.6	85.7	100.6	69.1	87.8	100.0	57.6	82.8	91.3	99.3	94.5	86.7	82.1	84.8	99.6	69.4	87.3
08	OPENINGS	99.4	49.7	87.6	98.6	55.3	88.4	101.6	56.6	91.0	97.0	99.3	97.5	97.9	79.4	93.5	99.3	89.8	97.1
0920	Plaster & Gypsum Board	93.6	51.8	65.2	97.6	36.1	55.8	92.4	51.0	64.2	61.2	105.6	91.4	86.4	83.7	84.6	86.4	90.2	89.0
0950, 0980	Ceilings & Acoustic Treatment	94.3	51.8	66.0	97.6	36.1	56.7	99.4	51.0	67.2	83.8	105.6	98.3	88.8	83.7	85.4	88.8	90.2	89.7
0960	Flooring	100.7	63.1	89.5	106.9	75.0	97.3	108.3	64.1	95.1	80.1	104.2	87.3	96.5	87.6	93.9	98.6	42.0	81.7
0970, 0990	Wall Finishes & Painting/Coating	97.4	39.8	62.8	99.2	53.7	71.9	96.3	49.0	67.9	96.9	103.4	100.8	94.7	74.3	82.4	94.7	66.8	77.9
09	FINISHES	98.5	54.8	74.2	103.1	47.0	71.8	102.7	53.5	75.3	82.5	105.7	95.4	93.1	84.0	88.0	93.9	75.7	83.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	54.2	90.8	100.0	48.4	89.7	100.0	51.1	90.2	100.0	96.3	99.3	100.0	59.8	91.9	100.0	57.3	91.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	68.7	87.5	100.0	69.0	87.5	99.8	64.3	85.6	95.0	92.9	94.1	100.0	84.3	93.7	95.1	81.5	89.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.5	73.3	83.4	94.2	73.1	83.2	99.0	73.3	85.6	90.7	99.6	95.4	93.3	82.1	87.4	90.6	67.7	78.6
MF2010	WEIGHTED AVERAGE	100.4	67.0	85.9	99.4	66.5	85.1	99.9	65.1	84.8	94.0	100.1	96.6	95.5	84.8	90.8	95.1	80.2	88.6

DIVISION		KENTUCKY																	
		CORBIN			COVINGTON			ELIZABETHTOWN			FRANKFORT			HAZARD			HENDERSON		
		407 - 409			410			427			406			417 - 418			424		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	101.5	101.5		105.0	105.0		95.1	95.1		101.5	101.5		101.5	101.5		116.1	116.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	83.0	98.5	93.9	79.4	112.3	102.5	70.4	97.8	89.6	87.1	99.7	95.9	81.8	100.1	94.6	78.4	124.1	110.5
0310	Concrete Forming & Accessories	88.9	72.3	74.6	86.0	92.9	92.0	81.6	82.4	82.3	99.5	73.4	77.0	87.1	85.4	85.6	93.4	83.5	84.8
0320	Concrete Reinforcing	87.0	72.1	79.5	85.9	94.0	90.0	86.9	93.8	90.3	99.8	93.7	96.8	87.7	105.0	96.3	86.6	87.6	87.1
0330	Cast-in-Place Concrete	92.2	59.9	78.8	93.9	99.6	96.3	79.6	74.6	77.5	87.2	70.6	80.3	94.4	84.2	90.2	77.8	92.5	83.9
03	CONCRETE	92.6	68.4	80.7	96.5	95.5	96.0	86.6	82.0	84.3	93.0	76.6	84.9	95.0	88.7	91.9	91.6	87.4	89.6
04	MASONRY	89.8	63.0	73.2	105.4	103.3	104.1	78.5	76.8	77.4	87.2	80.8	83.3	89.3	72.8	79.1	97.8	94.5	95.8
05	METALS	93.4	79.8	89.2	91.0	91.7	91.2	92.8	88.8	91.6	95.8	89.5	93.9	93.0	93.7	93.2	84.4	88.6	85.7
06	WOOD, PLASTICS & COMPOSITES	88.5	77.7	82.4	88.7	86.0	87.2	87.4	83.9	85.4	105.5	70.3	85.6	87.7	91.1	89.6	95.1	80.8	87.1
07	THERMAL & MOISTURE PROTECTION	98.8	65.6	85.3	99.4	95.4	97.8	86.4	78.8	83.3	98.8	77.1	90.0	99.5	71.3	88.1	99.0	93.6	96.8
08	OPENINGS	99.3	67.2	91.7	101.3	85.7	97.6	97.9	85.3	94.9	102.1	78.2	96.4	99.7	80.3	95.1	96.0	81.8	92.7
0920	Plaster & Gypsum Board	90.6	76.4	80.9	69.4	86.1	80.8	85.6	83.7	84.3	100.9	68.8	79.0	85.6	90.2	88.7	89.7	79.7	82.9

City Cost Indexes

DIVISION		KENTUCKY																	
		LEXINGTON			LOUISVILLE			OWENSBORO			PADUCAH			PIKEVILLE			SOMERSET		
		403 - 405			400 - 402			423			420			415 - 416			425 - 426		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		101.5	101.5		95.1	95.1		116.1	116.1		116.1	116.1		98.0	98.0		101.5	101.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.0	100.9	96.2	75.7	97.8	91.3	87.9	124.1	113.3	80.9	123.6	110.9	119.6	86.0	96.0	75.1	99.3	92.1
0310	Concrete Forming & Accessories	101.5	74.3	78.0	100.6	83.0	85.4	91.8	83.4	84.5	89.9	81.8	82.9	97.7	90.9	91.9	88.0	77.6	79.0
0320	Concrete Reinforcing	95.5	93.5	94.5	97.1	93.8	95.4	86.6	90.2	88.4	87.1	89.0	88.0	89.6	105.9	97.7	86.9	93.7	90.3
0330	Cast-in-Place Concrete	94.3	93.9	94.2	95.8	75.4	87.4	90.7	96.1	92.9	82.9	88.3	85.1	97.5	98.7	98.0	77.8	100.3	87.1
03	CONCRETE	95.8	84.9	90.5	96.7	82.5	89.7	103.4	89.1	96.4	96.0	85.5	90.8	109.6	97.1	103.5	81.8	88.6	85.2
04	MASONRY	88.4	73.4	79.1	88.9	78.2	82.3	90.5	92.6	91.8	93.5	90.0	91.3	90.0	98.5	95.2	84.7	78.1	80.6
05	METALS	95.8	89.9	93.9	97.6	88.9	94.9	85.9	90.2	87.2	83.0	88.4	84.6	92.0	108.5	97.1	92.9	89.3	91.8
06	WOOD, PLASTICS & COMPOSITES	105.1	70.3	85.5	103.1	83.9	92.3	93.0	80.8	86.1	90.6	80.9	85.2	88.6	90.4	89.6	88.3	77.7	82.3
07	THERMAL & MOISTURE PROTECTION	99.1	85.7	93.6	97.9	79.5	90.4	99.3	93.9	97.1	99.0	80.9	91.7	91.9	81.5	87.7	99.0	71.8	87.9
08	OPENINGS	99.5	75.3	93.8	99.0	85.3	95.8	96.0	83.9	93.1	95.2	79.4	91.5	97.7	88.4	95.5	98.7	79.6	94.2
0920	Plaster & Gypsum Board	100.6	68.8	79.0	93.2	83.7	86.7	88.2	79.7	82.4	87.1	79.8	82.1	64.5	90.2	82.0	85.6	76.4	79.4
0950, 0980	Ceilings & Acoustic Treatment	90.5	68.8	76.1	94.3	83.7	87.2	82.5	79.7	80.6	82.5	79.8	80.7	83.8	90.2	88.0	88.8	76.4	80.5
0960	Flooring	105.0	71.6	95.0	102.9	87.6	98.3	99.5	87.6	96.0	98.5	60.4	87.1	83.8	104.2	89.9	97.4	42.0	80.8
0970, 0990	Wall Finishes & Painting/Coating	94.2	82.8	87.3	93.9	77.8	84.2	94.7	98.1	96.7	94.7	81.4	86.7	96.9	83.0	88.5	94.7	77.8	84.6
09	FINISHES	97.5	73.6	84.2	97.9	83.5	89.9	92.9	85.2	88.6	92.1	77.8	84.1	84.9	93.0	89.4	92.6	70.9	80.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	88.4	97.7	100.0	87.1	97.4	100.0	100.9	100.2	100.0	63.4	92.7	100.0	57.8	91.5	100.0	60.0	92.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	80.6	92.2	100.0	82.6	93.0	100.0	78.4	91.3	95.4	82.9	90.4	95.0	89.0	92.6	95.4	79.1	88.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.4	82.1	87.5	100.0	82.1	90.6	92.7	82.2	87.3	95.1	81.8	88.2	93.7	75.1	84.0	91.0	82.1	86.4
MF2010	WEIGHTED AVERAGE	97.0	82.4	90.7	97.8	84.2	91.9	95.6	88.9	92.7	93.2	86.2	90.2	96.2	90.0	93.5	92.7	81.5	87.8

DIVISION		LOUISIANA																	
		ALEXANDRIA			BATON ROUGE			HAMMOND			LAFAYETTE			LAKE CHARLES			MONROE		
		713 - 714			707 - 708			704			705			706			712		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.7	89.7		89.3	89.3		89.3	89.3		89.3	89.3		89.3	89.3		89.7	89.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.3	86.7	89.5	96.0	86.0	89.0	99.1	86.9	90.5	100.1	87.0	90.9	100.8	85.9	90.3	96.3	85.9	89.0
0310	Concrete Forming & Accessories	83.0	44.2	49.5	94.1	61.7	66.1	78.1	46.9	51.2	95.2	54.9	60.4	96.1	57.5	62.8	82.5	43.9	49.2
0320	Concrete Reinforcing	89.4	56.0	72.7	95.1	59.0	77.1	93.3	59.4	76.4	94.6	59.0	76.8	94.6	59.2	76.9	88.4	55.6	72.0
0330	Cast-in-Place Concrete	94.6	50.3	76.2	91.8	58.7	78.0	93.9	43.9	73.2	93.5	47.6	74.4	98.4	67.4	85.5	94.6	56.7	78.8
03	CONCRETE	94.7	49.7	72.5	95.9	60.7	78.5	93.3	49.1	71.5	94.4	53.8	74.4	96.7	61.8	79.5	94.5	51.5	73.3
04	MASONRY	116.0	54.2	77.8	97.6	54.7	71.0	99.0	51.8	69.8	99.0	53.0	70.5	98.3	59.5	74.3	110.9	48.4	72.2
05	METALS	89.5	71.1	83.9	106.0	70.1	94.9	97.6	69.5	88.9	96.7	70.0	88.5	96.7	70.5	88.7	89.5	68.5	83.0
06	WOOD, PLASTICS & COMPOSITES	89.8	42.7	63.2	98.5	65.3	79.8	84.8	48.1	64.1	106.3	57.0	78.5	104.4	59.1	78.8	89.1	43.2	63.2
07	THERMAL & MOISTURE PROTECTION	97.5	54.1	79.9	95.8	62.4	82.2	96.9	57.0	80.7	97.4	60.8	82.5	96.5	59.5	81.5	97.5	54.7	80.1
08	OPENINGS	99.8	45.8	87.0	98.6	60.0	89.5	92.7	52.5	83.2	96.3	53.9	86.3	96.3	55.7	86.7	99.7	48.8	87.7
0920	Plaster & Gypsum Board	79.0	41.4	53.4	99.4	64.6	75.7	100.1	46.8	63.8	109.6	56.0	73.2	109.6	58.1	74.6	78.6	41.9	53.6
0950, 0980	Ceilings & Acoustic Treatment	87.1	41.4	56.7	103.1	64.6	77.4	98.7	46.8	64.2	97.0	56.0	69.7	98.0	58.1	71.5	87.1	41.9	57.0
0960	Flooring	110.0	66.9	97.1	106.0	66.9	94.3	98.6	66.9	89.1	106.8	66.9	94.9	106.8	74.3	97.1	109.5	58.1	94.2
0970, 0990	Wall Finishes & Painting/Coating	99.5	65.8	79.2	96.1	47.3	66.8	103.4	49.3	70.9	103.4	59.2	76.8	103.4	51.0	71.9	99.5	49.1	69.2
09	FINISHES	93.2	50.0	69.1	100.6	61.6	78.9	97.8	50.9	71.7	101.1	57.5	76.8	101.3	59.9	78.2	93.0	46.5	67.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	51.4	90.3	100.0	80.9	96.2	100.0	46.6	89.3	100.0	79.4	95.9	100.0	80.4	96.1	100.0	47.0	89.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	56.5	82.7	100.0	59.5	83.8	95.2	43.7	74.5	100.1	60.7	84.3	100.1	61.7	84.7	100.2	54.1	81.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.5	58.2	73.6	103.0	60.8	81.0	98.2	57.3	76.8	99.5	66.6	82.3	98.9	66.6	82.0	92.2	59.6	75.2
MF2010	WEIGHTED AVERAGE	96.8	57.8	79.8	100.4	63.6	84.4	96.3	54.9	78.3	98.5	62.7	82.9	98.6	65.0	84.0	96.7	56.4	79.2

DIVISION		LOUISIANA									MAINE								
		NEW ORLEANS			SHREVEPORT			THIBODAUX			AUGUSTA			BANGOR			BATH		
		700 - 701			710 - 711			703			043			044			045		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		90.2	90.2		89.7	89.7		89.9	89.9		100.6	100.6		100.6	100.6		100.6	100.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.2	88.4	93.4	100.8	86.0	90.4	101.4	87.0	91.3	89.2	100.8	97.3	91.0	101.0	98.0	88.9	100.8	97.2
0310	Concrete Forming & Accessories	97.7	66.5	70.8	98.8	44.7	52.2	90.1	64.3	67.8	99.2	97.0	97.3	93.6	98.8	98.1	89.7	97.2	96.2
0320	Concrete Reinforcing	96.7	60.1	78.4	92.6	56.1	74.4	93.3	59.2	76.3	96.4	110.1	103.2	90.1	111.5	100.8	89.2	111.2	100.2
0330	Cast-in-Place Concrete	99.7	70.1	87.4	99.4	53.4	80.3	100.9	51.3	80.3	97.9	60.3	82.3	80.2	113.0	93.8	80.2	60.3	72.0
03	CONCRETE	97.8	67.1	82.6	99.6	50.9	75.6	98.4	59.3	79.1	104.6	86.2	95.5	94.4	105.3	99.8	94.5	86.4	90.5
04	MASONRY	101.8	60.7	76.4	102.0	51.0	70.4	124.8	49.3	78.1	96.8	64.8	77.0	106.0	103.9	104.7	112.3	85.8	95.9
05	METALS	109.5	73.0	98.3	93.3	69.2	85.9	97.6	69.3	88.9	97.8	88.0	94.8	88.7	90.4	89.2	87.2	89.6	87.9
06	WOOD, PLASTICS & COMPOSITES	99.7	67.9	81.8	101.7	43.7	69.0	92.9	69.7	79.8	98.6	107.7	103.7	95.1	98.7	97.1	89.7	107.7	99.9
07	THERMAL & MOISTURE PROTECTION	96.1	69.0	85.1	97.1	52.2	78.9	96.7	54.6	79.6	104.3	66.8	89.1	100.2	86.0	94.5	100.2	73.2	89

City Cost Indexes

DIVISION		MAINE														
		HOULTON			KITTERY			LEWISTON			MACHIAS			PORTLAND		
		047			039			042			046			040 - 041		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.6	100.6		100.6	100.6		100.6	100.6		100.6	100.6		100.6	100.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.7	101.8	98.5	85.6	100.8	96.3	88.2	101.0	97.2	90.1	101.8	98.3	86.9	101.0	96.8
0310	Concrete Forming & Accessories	97.1	103.6	102.7	90.4	97.7	96.7	98.9	98.9	98.9	94.4	103.5	102.3	95.8	98.9	98.4
0320	Concrete Reinforcing	90.1	109.9	100.0	84.5	111.3	97.8	110.8	111.5	111.1	90.1	109.9	100.0	107.5	111.5	109.5
0330	Cast-in-Place Concrete	80.3	72.6	77.1	81.4	61.2	73.0	81.9	113.0	94.8	80.2	72.0	76.8	95.5	113.0	102.7
03	CONCRETE	95.5	93.3	94.4	90.1	87.0	88.6	95.1	105.3	100.1	94.9	93.1	94.0	100.8	105.3	103.0
04	MASONRY	91.0	76.3	81.9	101.0	85.8	92.2	91.7	103.9	99.2	91.0	76.3	81.9	101.3	103.9	102.9
05	METALS	87.4	87.9	87.5	87.1	89.8	87.9	91.7	90.4	91.3	87.4	87.9	87.6	99.4	90.4	96.6
06	WOOD, PLASTICS & COMPOSITES	99.1	107.7	104.0	88.7	107.7	99.4	101.2	98.7	99.8	96.1	107.7	102.6	96.1	98.7	97.5
07	THERMAL & MOISTURE PROTECTION	100.3	74.0	89.6	103.2	72.5	90.7	100.1	86.0	94.4	100.3	73.0	89.2	101.4	86.0	95.2
08	OPENINGS	102.6	88.2	99.2	102.7	90.0	99.6	105.6	85.0	100.7	102.6	88.2	99.2	105.7	85.0	100.8
0920	Plaster & Gypsum Board	101.0	107.4	105.3	94.7	107.4	103.3	104.5	98.0	100.1	99.5	107.4	104.8	101.0	98.0	99.0
0950, 0980	Ceilings & Acoustic Treatment	89.6	107.4	101.4	90.6	107.4	101.8	101.4	98.0	99.1	89.6	107.4	101.4	104.4	98.0	100.1
0960	Flooring	100.1	52.7	85.9	97.5	58.7	85.9	101.6	113.0	105.0	99.3	52.7	85.4	101.9	113.0	105.2
0970, 0990	Wall Finishes & Painting/Coating	95.3	140.1	122.2	95.4	39.3	61.7	95.3	45.1	65.1	95.3	140.1	122.2	93.4	45.1	64.4
09	FINISHES	98.8	99.7	99.3	96.2	85.6	90.3	101.8	96.3	98.7	98.3	99.7	99.1	102.5	96.3	99.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	108.9	101.8	100.0	103.6	100.7	100.0	110.0	102.0	100.0	108.9	101.8	100.0	110.0	102.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	74.1	86.8	95.2	77.3	88.0	100.1	75.9	90.4	95.2	74.1	86.8	100.0	75.9	90.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.6	80.0	89.9	98.0	80.0	88.6	100.6	80.1	89.9	100.6	80.0	89.9	103.3	80.1	91.2
MF2010	WEIGHTED AVERAGE	95.9	86.6	91.8	95.1	85.7	91.0	98.3	91.2	95.2	95.7	86.5	91.7	100.8	91.2	96.6
DIVISION		MAINE			MARYLAND											
		WATERVILLE			ANNAPOLIS			BALTIMORE			COLLEGE PARK			CUMBERLAND		
		046			214			210 - 212			207 - 208			215		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.6	100.6		99.3	99.3		102.8	102.8		104.3	104.3		99.3	99.3	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.8	100.8	97.8	98.2	90.9	93.1	99.8	94.8	96.3	103.7	94.1	96.9	91.4	90.9	91.1
0310	Concrete Forming & Accessories	89.2	97.0	96.0	98.1	70.3	74.1	100.3	72.6	76.4	86.2	71.2	73.2	91.6	80.8	82.3
0320	Concrete Reinforcing	90.1	110.1	100.1	104.0	82.1	93.0	104.5	82.1	93.3	109.0	80.5	94.7	87.7	74.6	81.2
0330	Cast-in-Place Concrete	80.3	60.3	72.0	110.8	77.1	96.8	111.3	77.9	97.4	122.5	78.0	104.0	93.6	85.7	90.3
03	CONCRETE	96.0	86.2	91.1	103.7	75.9	90.0	104.2	77.2	90.9	109.4	76.6	93.2	89.4	82.2	85.9
04	MASONRY	100.7	64.8	78.5	96.1	72.9	81.7	98.4	72.9	82.6	108.4	69.4	84.3	94.6	84.4	88.3
05	METALS	87.3	88.0	87.5	104.7	93.8	101.3	101.5	94.3	99.3	87.0	97.5	90.2	99.2	91.2	96.7
06	WOOD, PLASTICS & COMPOSITES	89.2	107.7	99.6	97.6	70.6	82.4	97.3	73.7	84.0	87.6	70.8	78.1	86.3	79.8	82.6
07	THERMAL & MOISTURE PROTECTION	100.3	66.8	86.7	101.1	79.6	92.4	99.1	80.2	91.4	102.6	78.5	92.9	99.5	80.4	91.7
08	OPENINGS	102.6	90.0	99.6	99.3	78.1	94.3	97.7	79.8	93.5	94.7	75.2	90.1	96.0	78.7	91.9
0920	Plaster & Gypsum Board	95.1	107.4	103.4	100.5	70.0	79.7	103.4	73.0	82.8	97.1	70.0	78.6	100.7	79.5	86.3
0950, 0980	Ceilings & Acoustic Treatment	89.6	107.4	101.4	100.6	70.0	80.2	98.1	73.0	81.4	98.1	70.0	79.4	100.1	79.5	86.4
0960	Flooring	97.0	56.3	84.8	100.7	78.6	94.1	100.0	78.6	93.6	97.9	80.5	92.7	96.2	92.5	95.1
0970, 0990	Wall Finishes & Painting/Coating	95.3	64.7	76.9	91.7	80.9	85.2	94.6	80.9	86.4	104.6	77.5	88.3	94.4	75.0	82.7
09	FINISHES	97.2	87.7	91.9	97.2	72.1	83.2	99.9	73.9	85.4	96.3	72.8	83.2	97.6	82.3	89.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	103.3	100.7	100.0	85.6	97.1	100.0	86.3	97.3	100.0	83.8	96.8	100.0	90.2	98.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	65.6	83.3	100.0	81.7	92.6	100.0	81.7	92.7	95.3	85.0	91.2	95.1	73.0	86.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.6	80.0	89.8	96.7	91.7	94.1	101.4	91.7	96.3	102.2	99.8	100.9	96.6	81.6	88.8
MF2010	WEIGHTED AVERAGE	96.2	80.8	89.5	100.3	81.8	92.3	100.5	82.8	92.8	97.6	83.9	91.7	96.0	81.9	89.9
DIVISION		MARYLAND												MASSACHUSETTS		
		ELKTON			HAGERSTOWN			SALISBURY			SILVER SPRING			WALDORF		
		219			217			218			209			206		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	99.3	99.3		99.3	99.3		99.3	99.3		97.2	97.2		97.2	97.2	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.8	88.7	87.8	89.8	91.6	91.0	98.1	88.0	91.0	91.3	87.5	88.6	98.0	87.1	90.3
0310	Concrete Forming & Accessories	95.5	82.6	84.4	90.6	76.3	78.3	103.5	52.9	59.8	94.8	71.4	74.6	102.4	69.6	74.1
0320	Concrete Reinforcing	87.0	101.6	94.3	87.7	74.6	81.2	87.0	65.6	76.3	107.6	80.4	94.0	108.3	80.4	94.4
0330	Cast-in-Place Concrete	84.2	76.5	81.0	89.2	85.7	87.8	104.0	47.9	80.7	125.4	79.8	106.5	140.5	76.9	114.1
03	CONCRETE	82.6	84.7	83.7	86.0	80.2	83.1	97.9	55.0	76.7	108.0	77.1	92.7	118.7	75.3	97.3
04	MASONRY	94.1	59.9	73.0	100.3	84.4	90.4	107.7	48.1	70.9	107.3	72.7	85.9	92.7	67.6	77.2
05	METALS	99.5	99.2	99.4	99.3	91.3	96.8	99.5	82.4	94.2	91.2	93.9	92.1	91.2	93.8	92.0
06	WOOD, PLASTICS & COMPOSITES	91.3	88.8	89.9	85.4	73.5	78.7	101.5	56.3	76.0	94.5	70.1	80.7	102.3	70.1	84.1
07	THERMAL & MOISTURE PROTECTION	99.2	75.1	89.4	99.2	78.6	90.8	99.8	65.2	85.7	105.6	84.4	97.0	106.1	82.2	96.4
08	OPENINGS	94.4	81.4	91.3	94.4	74.5	89.6	94.6	62.8	87.1	86.8	74.7	84.0	87.5	74.7	84.5
0920	Plaster & Gypsum Board	103.6	88.8	93.6	100.3	73.0	81.8	110.0	55.3	72.8	102.9	70.0	80.5	106.2	70.0	81.6
0950, 0980	Ceilings & Acoustic Treatment	100.1	88.8	92.6	101.0	73.0	82.4	100.1	55.3	70.3	107.8	70.0	82.6	107.8	70.0	82.6
0960	Flooring	97.6	59.5	86.2	95.8	92.5	94.8	101.0	65.9	90.5	104.0	80.5	97.0	107.5	80.5	99.4
0970, 0990	Wall Finishes & Painting/Coating	94.4	77.5	84.3	94.4	77.5	84.3	94.4	77.5	84.3	111.6	77.5	91.1	111.6	77.5	91.1
09	FINISHES	98.0	78.4	87.1	97.5	78.9	87.1	100.7	57.3	76.5	96.8	72.3	83.2	98.5	71.7	83.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	61.4	92.3	100.0	89.5	97.9	100.0	39.7	87.9	100.0	83.1	96.6	100.0	81.4	96.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.1	79.3	88.8	100.0	81.4	92.5	95.1	61.2	81.5	95.3	86.3	91.7	95.3	83.7	90.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.9	91.7	94.6	96.4	81.6	88.7	94.8	68.7	81.2	99.4	99.8	99.6	96.6	99.8	98.3
MF2010	WEIGHTED AVERAGE	95.1	81.9	89.4	96.9	82.8	90.7	97.8	63.3	82.8	96.9	83.8	91.2	97.5	82.2	90.9

City Cost Indexes

DIVISION		MASSACHUSETTS																	
		BROCKTON			BUZZARDS BAY			FALL RIVER			FITCHBURG			FRAMINGHAM			GREENFIELD		
		023			025			027			014			017			013		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	102.4	102.4		102.4	102.4		103.3	103.3		100.6	100.6		101.8	101.8		100.6	100.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	95.7	104.8	102.1	85.8	104.8	99.1	94.8	104.9	101.9	85.8	104.7	99.1	82.5	104.5	97.9	89.6	103.2	99.2
0310	Concrete Forming & Accessories	102.6	131.5	127.5	100.2	131.4	127.1	102.6	131.7	127.7	94.8	126.0	121.7	102.0	131.2	127.2	93.2	112.1	109.5
0320	Concrete Reinforcing	106.8	157.0	131.9	85.6	165.2	125.4	106.8	165.2	136.0	85.4	156.0	120.6	85.3	156.7	121.0	88.6	126.0	107.3
0330	Cast-in-Place Concrete	98.6	152.4	120.9	82.0	152.4	111.2	95.4	152.9	119.3	85.7	148.3	111.7	85.8	140.8	108.6	88.2	129.2	105.2
03	CONCRETE	104.8	142.5	123.4	88.7	144.0	115.9	103.3	144.3	123.5	86.8	138.3	112.2	89.7	138.4	113.7	90.6	119.9	105.1
04	MASONRY	102.4	159.6	137.8	95.0	159.6	134.9	103.3	159.5	138.1	93.0	155.2	131.5	98.6	155.3	133.7	96.9	133.2	119.4
05	METALS	99.4	129.7	108.8	94.4	132.9	106.3	99.4	133.3	109.9	95.6	126.2	105.0	95.6	129.0	105.9	97.8	109.2	101.3
06	WOOD, PLASTICS & COMPOSITES	102.0	129.4	117.5	98.9	129.4	116.1	102.0	129.6	117.6	95.7	122.7	111.0	102.2	129.1	117.4	93.5	109.8	102.7
07	THERMAL & MOISTURE PROTECTION	101.7	148.3	120.6	101.0	146.7	119.5	101.6	145.9	119.6	100.8	140.1	116.8	100.9	145.2	118.8	100.9	121.2	109.1
08	OPENINGS	98.1	137.7	107.4	94.0	135.4	103.8	98.1	135.5	106.9	104.5	133.9	111.5	94.7	137.6	104.8	104.5	114.7	106.9
0920	Plaster & Gypsum Board	95.4	129.7	118.7	91.1	129.7	117.3	95.4	129.7	118.7	97.3	122.8	114.6	99.9	129.7	120.1	98.0	109.4	105.8
0950, 0980	Ceilings & Acoustic Treatment	100.9	129.7	120.1	90.0	129.7	116.4	100.9	129.7	120.1	90.6	122.8	112.0	90.6	129.7	116.6	99.5	109.4	106.1
0960	Flooring	100.4	183.1	125.1	98.9	183.1	124.1	99.8	183.1	124.7	98.2	183.1	123.6	99.6	183.1	124.5	97.5	149.9	113.2
0970, 0990	Wall Finishes & Painting/Coating	96.0	135.1	119.5	96.0	135.1	119.5	96.0	135.1	119.5	95.1	135.1	119.2	96.1	135.1	119.6	95.1	108.5	103.1
09	FINISHES	100.0	141.4	123.0	96.0	141.4	121.3	99.9	141.6	123.1	96.1	137.4	119.1	96.7	141.2	121.5	98.3	118.7	109.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	116.4	103.3	100.0	116.4	103.3	100.0	117.0	103.4	100.0	102.5	100.5	100.0	115.9	103.2	100.0	105.1	101.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	111.2	104.5	95.2	111.2	101.6	100.1	111.3	104.6	95.8	113.6	103.0	95.8	120.4	105.7	95.8	100.8	97.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.7	100.7	100.7	97.6	100.7	99.2	100.6	100.7	100.6	100.4	104.2	102.4	96.7	129.2	113.7	100.4	92.8	96.4
MF2010	WEIGHTED AVERAGE	100.4	126.3	111.7	94.9	126.7	108.8	100.2	126.8	111.8	96.3	124.6	108.6	95.5	131.0	111.0	97.5	110.2	103.0

DIVISION		MASSACHUSETTS																	
		HYANNIS			LAWRENCE			LOWELL			NEW BEDFORD			PITTSFIELD			SPRINGFIELD		
		026			019			018			027			012			010 - 011		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	102.4	102.4		102.4	102.4		100.6	100.6		103.3	103.3		100.6	100.6		100.6	100.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.9	104.8	101.0	94.5	104.8	101.7	93.7	104.7	101.5	93.4	104.9	101.5	94.7	103.1	100.6	94.2	103.2	100.5
0310	Concrete Forming & Accessories	94.6	131.4	126.3	103.2	131.7	127.8	100.0	131.5	127.2	102.6	131.7	127.7	99.9	111.5	109.9	100.2	111.7	110.1
0320	Concrete Reinforcing	85.6	165.2	125.4	105.6	146.6	126.0	106.5	146.3	126.4	106.8	165.2	136.0	87.9	126.0	106.9	106.5	126.0	116.2
0330	Cast-in-Place Concrete	90.0	152.4	115.9	99.2	149.8	120.2	90.2	149.7	114.9	84.1	152.9	112.6	98.4	128.3	110.8	93.9	128.5	108.3
03	CONCRETE	95.0	144.0	119.2	104.9	139.8	122.1	96.3	139.5	117.6	97.9	144.3	120.8	97.2	119.3	108.1	98.0	119.4	108.6
04	MASONRY	101.4	159.6	137.4	103.3	159.6	138.1	92.4	155.2	131.3	101.3	159.5	137.3	93.0	131.5	116.8	92.7	131.9	117.0
05	METALS	95.9	132.9	107.3	98.2	125.8	106.7	98.1	123.0	105.8	99.4	133.3	109.9	98.0	109.2	101.4	100.6	109.2	103.2
06	WOOD, PLASTICS & COMPOSITES	91.9	129.4	113.1	102.7	129.4	117.7	101.9	129.4	117.4	102.0	129.6	117.6	101.9	109.8	106.4	101.9	109.8	106.4
07	THERMAL & MOISTURE PROTECTION	101.2	146.7	119.7	101.3	147.9	120.2	101.2	145.8	119.3	101.6	145.9	119.6	101.2	120.4	109.0	101.2	120.6	109.1
08	OPENINGS	94.6	135.4	104.3	98.4	134.9	107.1	105.7	134.9	112.6	98.1	135.5	106.9	105.7	114.7	107.8	105.7	114.7	107.8
0920	Plaster & Gypsum Board	86.7	129.7	115.9	102.8	129.7	121.1	102.8	129.7	121.1	95.4	129.7	118.7	102.8	109.4	107.3	102.8	109.4	107.3
0950, 0980	Ceilings & Acoustic Treatment	92.9	129.7	117.4	101.5	129.7	120.2	101.5	129.7	120.2	100.9	129.7	120.1	101.5	109.4	106.8	101.5	109.4	106.8
0960	Flooring	96.8	183.1	122.6	100.2	183.1	125.0	100.2	183.1	125.0	99.8	183.1	124.7	100.4	149.9	115.2	99.9	149.9	114.8
0970, 0990	Wall Finishes & Painting/Coating	96.0	135.1	119.5	95.2	135.1	119.2	95.1	135.1	119.2	96.0	135.1	119.5	95.1	108.5	103.1	96.5	108.5	103.7
09	FINISHES	95.8	141.4	121.2	100.4	141.4	123.2	100.3	141.4	123.2	99.7	141.6	123.0	100.4	118.3	110.4	100.3	118.4	110.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	116.4	103.3	100.0	116.5	103.3	100.0	116.5	103.3	100.0	117.0	103.4	100.0	104.5	100.9	100.0	104.6	100.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	111.2	104.5	100.0	120.4	108.2	100.0	118.1	107.3	100.1	111.3	104.6	100.0	100.0	100.0	100.0	100.2	100.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.1	100.7	99.4	99.4	129.2	115.0	99.9	129.2	115.2	101.5	100.7	101.1	99.9	92.8	96.2	99.9	92.8	96.2
MF2010	WEIGHTED AVERAGE	97.6	126.7	110.3	100.1	131.3	113.7	99.4	130.1	112.8	99.6	126.8	111.4	99.6	109.6	103.9	100.0	109.8	104.3

DIVISION		MASSACHUSETTS									MICHIGAN								
		WORCESTER			ANN ARBOR			BATTLE CREEK			BAY CITY			DEARBORN			DETROIT		
		015 - 016			481			490			487			481			482		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.6	100.6		110.7	110.7		102.6	102.6		110.7	110.7		110.7	110.7		98.7	98.7	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	94.1	104.7	101.5	78.7	97.2	91.6	89.4	87.9	88.4	70.2	96.4	88.6	78.4	97.4	91.7	92.0	99.0	96.9
0310	Concrete Forming & Accessories	100.5	126.1	122.6	97.8	111.4	109.6	97.5	87.1	88.5	97.9	89.0	90.2	97.7	116.2	113.6	99.5	116.2	113.9
0320	Concrete Reinforcing	106.5	155.2	130.8	95.7	123.7	109.7	92.2	96.0	94.1	95.7	122.8	109.3	95.7	123.8	109.8	97.2	123.8	110.5
0330	Cast-in-Place Concrete	93.3	148.3	116.2	86.2	109.5	95.9	95.1	100.0	97.1	82.5	92.0	86.5	84.3	112.5	96.0	91.4	112.5	100.1
03	CONCRETE	97.8	138.2	117.7	92.7	113.2	102.8	96.0	92.6	94.3	91.0	97.0	94.0	91.8	116.4	103.9	95.5	115.2	105.2
04	MASONRY	92.2	155.2	131.2	97.2	108.2	104.0	99.1	86.5	91.3	96.8	87.3	90.9	97.1	113.6	107.3	95.5	113.6	106.7
05	METALS	100.6	126.0	108.4	93.7	118.2	101.2	95.8	88.6	93.6	94.3	115.0							

City Cost Indexes

DIVISION		MICHIGAN																	
		FLINT			GAYLORD			GRAND RAPIDS			IRON MOUNTAIN			JACKSON			KALAMAZOO		
		484 - 485			497			493,495			498 - 499			492			491		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	110.7	110.7		105.1	105.1		102.6	102.6		94.2	94.2		105.1	105.1		102.6	102.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	68.2	96.5	88.1	83.4	85.7	85.0	89.5	88.0	88.4	92.1	94.1	93.5	105.8	88.0	93.3	89.7	87.9	88.4
0310	Concrete Forming & Accessories	100.6	91.4	92.7	95.4	77.7	80.1	97.0	84.7	86.4	87.5	86.1	86.3	92.4	88.3	88.9	97.5	86.8	88.2
0320	Concrete Reinforcing	95.7	123.2	109.5	85.9	109.3	97.6	98.6	95.9	97.2	85.7	95.4	90.6	83.5	123.1	103.3	92.2	93.6	92.9
0330	Cast-in-Place Concrete	86.8	94.7	90.1	94.9	87.8	92.0	100.1	97.6	99.1	112.3	87.2	101.9	94.8	93.8	94.4	97.0	99.8	98.2
03	CONCRETE	93.2	99.1	96.1	92.4	88.2	90.3	99.3	90.7	95.1	101.8	88.4	95.2	87.2	97.3	92.2	99.4	92.0	95.8
04	MASONRY	97.3	96.8	97.0	109.6	80.5	91.6	96.1	86.6	90.2	95.6	87.6	90.7	89.7	92.8	91.7	97.8	86.5	90.8
05	METALS	93.7	115.7	100.5	97.2	111.7	101.6	93.0	88.2	91.5	96.6	91.1	94.9	97.3	113.6	102.4	95.8	87.5	93.3
06	WOOD, PLASTICS & COMPOSITES	98.2	89.9	93.5	92.8	76.9	83.8	101.5	83.1	91.1	87.5	86.1	86.7	91.5	86.6	88.7	100.3	86.3	92.4
07	THERMAL & MOISTURE PROTECTION	97.8	97.9	97.9	95.1	76.2	87.4	99.5	77.4	90.5	98.6	83.1	92.3	94.5	94.5	94.5	96.7	85.5	92.1
08	OPENINGS	97.7	95.5	97.1	94.8	76.0	90.3	100.6	85.6	97.0	101.3	77.3	95.7	93.8	93.9	93.8	94.2	82.1	91.3
0920	Plaster & Gypsum Board	107.7	88.6	94.7	92.8	74.9	80.6	94.9	78.8	83.9	53.7	86.1	75.7	91.0	84.9	86.9	93.0	82.0	85.6
0950, 0980	Ceilings & Acoustic Treatment	93.1	88.6	90.1	95.7	74.9	81.9	105.1	78.8	87.6	94.6	86.1	88.9	95.7	84.9	88.5	96.5	82.0	86.9
0960	Flooring	96.1	94.9	95.7	95.7	93.9	95.1	103.6	84.3	97.8	119.6	95.6	112.4	94.4	84.3	91.4	103.7	77.1	95.8
0970, 0990	Wall Finishes & Painting/Coating	86.5	87.3	87.0	93.1	83.7	87.5	98.9	80.0	87.6	111.4	71.8	87.6	93.1	98.8	96.5	97.2	81.8	87.9
09	FINISHES	93.6	90.7	92.0	97.5	79.8	87.7	101.7	83.8	91.7	99.7	86.4	92.3	98.6	88.0	92.7	97.7	84.2	90.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.9	98.8	100.0	90.7	98.1	100.0	98.2	99.6	100.0	89.5	97.9	100.0	93.7	98.7	100.0	98.2	99.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	90.6	96.2	95.5	80.1	89.3	100.0	83.8	93.5	95.4	86.0	91.6	95.5	88.8	92.8	100.0	81.6	92.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.0	98.3	97.2	88.4	78.9	83.4	95.2	72.3	83.3	94.5	86.3	90.2	92.2	110.0	101.5	90.2	83.7	86.8
MF2010	WEIGHTED AVERAGE	96.1	96.8	96.4	95.5	84.4	90.7	98.1	84.5	92.2	97.5	87.4	93.1	95.0	95.9	95.4	97.1	85.9	92.2

DIVISION		MICHIGAN																		MINNESOTA		
		LANSING			MUSKEGON			ROYAL OAK			SAGINAW			TRAVERSE CITY			BEMIDJI					
		484 - 485			494			480,483			486			494			566					
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL			
015433	CONTRACTOR EQUIPMENT	110.7	110.7		102.6	102.6		96.2	96.2		110.7	110.7		94.2	94.2		99.0	99.0				
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.5	96.6	94.8	87.5	87.9	87.8	83.0	96.8	92.7	71.2	96.4	88.9	78.4	93.6	89.0	94.0	98.3	97.0			
0310	Concrete Forming & Accessories	98.0	89.2	90.4	97.9	85.6	87.3	93.6	112.7	110.1	97.8	88.8	90.0	87.5	75.7	77.3	88.7	91.4	91.0			
0320	Concrete Reinforcing	99.0	123.0	111.0	92.8	96.1	94.5	86.8	123.8	105.2	95.7	122.8	109.3	87.0	92.9	90.0	97.0	108.0	102.5			
0330	Cast-in-Place Concrete	100.5	92.9	97.3	94.8	95.8	95.2	75.5	108.3	89.1	85.2	91.9	88.0	87.6	80.0	84.5	104.1	104.2	104.1			
03	CONCRETE	100.0	97.4	98.7	94.3	90.6	92.5	79.9	112.2	95.8	92.2	96.9	94.5	83.9	80.8	82.4	96.9	100.0	98.4			
04	MASONRY	95.3	93.3	94.1	96.3	89.4	92.0	92.0	112.1	104.5	98.7	87.3	91.6	93.7	82.3	86.7	97.2	104.8	101.9			
05	METALS	91.4	115.1	98.7	93.6	88.5	92.0	96.8	99.4	97.6	93.8	114.8	100.3	96.5	89.7	94.4	90.2	121.0	99.7			
06	WOOD, PLASTICS & COMPOSITES	96.4	88.0	91.6	96.5	85.2	90.1	90.4	113.1	103.2	91.2	88.7	89.8	87.5	75.2	80.6	71.5	87.5	80.6			
07	THERMAL & MOISTURE PROTECTION	98.6	90.6	95.3	95.8	80.4	89.5	96.5	112.3	102.9	98.6	94.2	96.9	97.8	72.8	87.6	105.6	97.1	102.1			
08	OPENINGS	98.7	94.4	97.7	93.4	86.5	91.8	97.6	110.4	100.6	95.6	94.8	95.4	101.3	71.4	94.3	97.5	109.2	100.2			
0920	Plaster & Gypsum Board	92.2	86.6	88.4	74.3	80.9	78.8	103.2	112.5	109.5	106.2	87.3	93.4	53.7	74.9	68.1	100.6	87.4	91.6			
0950, 0980	Ceilings & Acoustic Treatment	96.8	86.6	90.0	97.4	80.9	86.4	92.3	112.5	105.8	93.1	87.3	89.3	94.6	74.9	81.5	137.1	87.4	104.0			
0960	Flooring	102.8	84.3	97.2	102.5	84.3	97.1	93.7	116.0	100.4	96.1	81.9	91.8	119.6	93.9	111.9	107.8	123.0	112.3			
0970, 0990	Wall Finishes & Painting/Coating	96.3	81.5	87.4	95.6	80.0	86.3	87.9	98.8	94.5	86.5	83.7	84.9	111.4	45.6	71.9	95.3	97.9	96.9			
09	FINISHES	98.2	87.0	91.9	94.3	84.0	88.6	93.3	112.2	103.8	93.9	86.5	89.8	98.6	74.3	85.1	111.3	97.1	103.4			
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.3	98.7	100.0	98.0	99.6	100.0	104.6	100.9	100.0	92.6	98.5	100.0	86.8	97.4	100.0	99.3	99.9			
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.9	88.9	95.5	99.9	83.1	93.1	95.4	108.0	100.5	100.0	84.2	93.7	95.4	79.4	89.0	95.5	84.8	91.2			
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.2	91.4	95.1	90.7	77.2	83.6	98.3	104.5	101.5	93.5	91.1	92.2	89.9	78.9	84.2	104.4	105.2	104.8			
MF2010	WEIGHTED AVERAGE	97.7	94.1	96.1	95.6	85.5	91.2	94.2	107.5	100.0	95.7	92.4	94.2	94.6	81.0	88.6	97.7	99.5	98.5			

DIVISION		MINNESOTA																	
		BRAINERD			DETROIT LAKES			DULUTH			MANKATO			MINNEAPOLIS			ROCHESTER		
		564			565			556 - 558			560			553 - 555			559		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		101.6	101.6		99.0	99.0		100.4	100.4		101.6	101.6		103.8	103.8		100.4	100.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	94.2	103.0	100.4	92.2	98.6	96.7	96.3	100.4	99.2	91.1	103.7	99.9	97.9	105.6	103.3	97.0	100.0	99.1
0310	Concrete Forming & Accessories	90.6	93.6	93.2	85.7	93.5	92.5	100.4	112.2	110.6	98.4	101.1	100.7	101.2	127.4	123.8	102.8	106.6	106.1
0320	Concrete Reinforcing	95.9	108.2	102.0	97.0	108.0	102.5	102.6	108.5	105.5	95.8	118.2	107.0	97.2	118.5	107.8	94.8	118.2	106.5
0330	Cast-in-Place Concrete	113.1	108.2	111.1	101.1	107.5	103.7	107.4	107.0	107.2	104.2	109.0	106.2	110.5	117.3	113.3	109.0	100.9	105.6
03	CONCRETE	100.8	102.4	101.6	94.5	102.1	98.2	101.3	110.3	105.7	96.5	107.9	102.1	103.4	122.6	112.9	100.7	107.7	104.1
04	MASONRY	119.6	113.5	115.8	119.9	110.8	114.2	104.6	117.0	112.3	108.6	110.5	109.8	114.7	125.3	121.3	107.0	112.5	110.4
05	METALS	91.3	121.0	100.5	90.2	120.9	99.7	93.4	123.3	102.6	91.2	126.7	102.1	98.6	130.0	108.3	95.2	128.4	105.4
06	WOOD, PLASTICS & COMPOSITES	89.5	87.3	88.3	68.5	87.5	79.3	103.6	111.9	108.3	99.0	98.7	98.8	109.0	126.0	118.6	109.0	105.2	106.9</

City Cost Indexes

DIVISION		MINNESOTA												MISSISSIPPI					
		SAINT PAUL			ST. CLOUD			THIEF RIVER FALLS			WILLMAR			WINDOM			BILOXI		
		550 - 551			563			567			562			561			395		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.4	100.4		101.6	101.6		99.0	99.0		101.6	101.6		101.6	101.6		99.3	99.3
D241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.1	101.1	100.5	89.7	105.1	100.5	92.9	98.2	96.7	89.1	102.8	98.7	83.3	101.7	96.3	98.8	89.6	92.3
0310	Concrete Forming & Accessories	102.0	124.9	121.8	87.7	120.4	116.0	89.4	90.8	90.6	87.5	93.1	92.3	92.0	86.8	87.5	95.6	54.1	59.8
0320	Concrete Reinforcing	98.5	118.5	108.5	95.9	118.4	107.1	97.4	107.9	102.7	95.6	118.0	106.8	95.6	117.1	106.4	95.8	58.4	77.1
0330	Cast-in-Place Concrete	120.2	116.7	118.7	99.9	115.8	106.5	103.2	89.5	97.5	101.4	86.9	95.4	87.7	67.8	79.4	108.7	54.8	86.3
03	CONCRETE	110.6	121.3	115.9	92.3	118.9	105.4	95.6	94.6	95.1	92.2	96.7	94.4	83.2	87.2	85.2	100.0	56.8	78.7
04	MASONRY	115.6	125.3	121.6	105.3	122.1	115.7	97.2	104.8	101.9	109.7	113.5	112.0	119.4	91.2	102.0	90.3	45.1	62.4
05	METALS	94.1	129.8	105.1	92.0	128.0	103.1	90.3	120.3	99.6	91.1	125.8	101.8	91.0	123.5	101.0	91.9	82.4	89.0
06	WOOD, PLASTICS & COMPOSITES	102.8	122.7	114.0	86.8	117.6	104.2	72.5	87.5	81.0	86.6	87.5	87.1	90.8	84.8	87.4	102.3	57.4	77.0
07	THERMAL & MOISTURE PROTECTION	101.8	128.1	112.5	104.8	120.1	111.0	106.5	100.0	103.9	104.6	110.8	107.1	104.6	91.0	99.1	97.0	55.4	80.1
08	OPENINGS	97.1	132.0	105.3	89.1	129.2	98.6	97.5	109.2	100.2	86.7	93.5	88.3	90.2	92.0	90.6	97.2	58.6	88.0
0920	Plaster & Gypsum Board	87.3	123.8	112.1	84.6	118.6	107.7	100.2	87.4	91.5	84.6	87.6	86.7	84.6	84.8	84.7	104.4	56.5	71.8
0950, 0980	Ceilings & Acoustic Treatment	98.5	123.8	115.4	66.7	118.6	101.2	137.1	87.4	104.0	66.7	87.6	80.6	66.7	84.8	78.7	95.9	56.5	69.7
0960	Flooring	99.5	123.0	106.5	103.3	123.0	109.2	107.5	123.0	112.1	105.1	123.0	110.4	107.3	123.0	112.0	114.4	56.1	97.0
0970, 0990	Wall Finishes & Painting/Coating	99.9	127.1	116.3	101.0	128.1	117.3	95.3	97.9	96.9	95.3	97.9	96.9	95.3	105.3	101.3	94.7	44.4	64.5
09	FINISHES	99.5	125.1	113.8	92.6	121.9	108.9	111.1	97.1	103.3	92.7	96.2	94.6	92.8	93.2	93.0	100.8	53.6	74.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	108.5	101.7	100.0	107.2	101.4	100.0	99.2	99.8	100.0	100.8	100.2	100.0	95.6	99.1	100.0	56.9	91.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.9	114.9	105.9	99.7	116.3	106.3	95.5	84.5	91.1	94.8	108.4	100.2	94.8	85.3	91.0	100.0	50.1	80.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.2	111.4	103.7	101.9	111.4	106.9	101.4	69.1	84.6	101.9	87.2	94.2	108.8	89.1	98.5	98.5	57.6	77.1
MF2010	WEIGHTED AVERAGE	100.2	118.8	108.3	96.3	117.8	105.7	97.3	93.8	95.7	94.9	103.0	98.4	95.3	93.3	94.4	97.7	59.1	80.9
DIVISION		MISSISSIPPI																	
		CLARKSDALE			COLUMBUS			GREENVILLE			GREENWOOD			JACKSON			LAUREL		
		386			397			387			389			390 - 392			394		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.3	99.3		99.3	99.3		99.3	99.3		99.3	99.3		99.3	99.3		99.3	99.3
D241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	95.6	89.4	91.2	97.1	89.6	91.9	101.3	89.6	93.1	98.3	89.1	91.8	95.9	89.6	91.5	102.9	89.5	93.5
0310	Concrete Forming & Accessories	85.3	50.4	55.2	84.4	52.4	56.8	82.0	65.2	67.5	94.3	50.4	56.4	94.6	58.9	63.8	84.4	54.2	58.3
0320	Concrete Reinforcing	100.0	42.9	71.5	102.7	43.9	73.3	100.6	62.2	81.4	100.0	54.2	77.1	101.2	57.5	79.4	103.3	40.3	71.9
0330	Cast-in-Place Concrete	103.0	54.4	82.8	110.8	59.5	89.5	106.0	56.5	85.5	110.7	54.1	87.2	98.9	57.8	81.8	108.4	56.1	86.7
03	CONCRETE	95.9	52.1	74.3	101.6	54.9	78.6	101.1	63.0	82.3	102.1	53.9	78.3	96.1	59.7	78.2	104.0	53.9	79.3
04	MASONRY	93.5	45.8	64.0	114.7	52.5	76.2	138.0	50.3	83.8	94.1	45.6	64.1	95.7	50.3	67.6	110.9	49.0	72.6
05	METALS	90.5	74.9	85.7	88.9	75.8	84.9	91.5	84.1	89.3	90.5	76.4	86.2	98.5	82.3	93.5	89.0	74.8	84.6
06	WOOD, PLASTICS & COMPOSITES	85.6	52.4	66.9	87.2	53.4	68.1	82.2	69.7	75.1	98.7	52.4	72.6	99.6	61.0	77.8	88.3	55.9	70.0
07	THERMAL & MOISTURE PROTECTION	95.9	48.0	76.5	97.0	52.3	78.8	96.2	61.0	81.9	96.3	47.9	76.6	97.1	60.3	82.1	97.1	54.0	79.6
08	OPENINGS	96.8	50.6	85.8	96.5	50.7	85.7	96.8	62.9	88.8	96.8	51.9	86.2	101.0	56.8	90.5	93.5	51.5	83.6
0920	Plaster & Gypsum Board	87.7	51.4	63.0	92.7	52.4	65.3	87.3	69.2	75.0	98.9	51.4	66.6	97.4	60.2	72.1	92.7	54.9	67.0
0950, 0980	Ceilings & Acoustic Treatment	87.8	51.4	63.6	90.3	52.4	65.1	89.7	69.2	76.1	87.8	51.4	63.6	98.4	60.2	73.0	90.3	54.9	66.8
0960	Flooring	111.6	53.8	94.3	108.2	60.3	93.9	109.9	53.8	93.1	117.1	53.8	98.2	111.9	56.1	95.2	106.8	53.8	91.0
0970, 0990	Wall Finishes & Painting/Coating	97.4	47.1	67.2	94.7	54.1	70.3	97.4	67.3	79.3	97.4	47.1	67.2	91.7	67.3	77.0	94.7	62.2	75.2
09	FINISHES	96.5	51.0	71.1	96.3	54.4	73.0	97.0	64.3	78.8	99.9	51.0	72.7	100.6	59.6	77.8	96.4	55.5	73.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	57.2	91.4	100.0	58.4	91.7	100.0	60.0	92.0	100.0	57.2	91.4	100.0	59.1	91.8	100.0	38.5	87.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.9	42.2	75.6	97.3	38.3	73.7	100.0	48.6	79.4	97.9	40.2	74.7	100.0	58.3	83.3	97.4	46.8	77.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.6	47.5	70.5	95.7	50.3	72.0	95.6	64.2	79.2	95.6	44.5	68.9	100.1	64.2	81.3	97.3	58.3	77.0
MF2010	WEIGHTED AVERAGE	95.8	53.8	77.5	97.1	55.1	78.8	99.4	63.1	83.6	97.0	53.3	78.0	99.1	63.5	83.6	97.2	57.1	79.7
DIVISION		MISSISSIPPI									MISSOURI								
		MCCOMB			MERIDIAN			TUPELO			BOWLING GREEN			CAPE GIRARDEAU			CHILLICOTHE		
		396			393			388			633			637			646		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.3	99.3		99.3	99.3		99.3	99.3		106.6	106.6		106.6	106.6		102.1	102.1
D241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.3	89.2	89.6	94.3	89.9	91.2	93.1	89.3	90.4	90.1	95.1	93.6	91.7	95.0	94.1	105.0	94.6	97.7
0310	Concrete Forming & Accessories	84.4	52.2	56.6	81.7	64.8	67.1	82.5	52.5	56.6	94.2	88.8	89.5	87.3	75.1	76.8	89.9	95.2	94.5
0320	Concrete Reinforcing	103.9	42.3	73.1	102.7	57.5	80.1	97.9	54.2	76.1	103.2	100.8	102.0	104.5	88.8	96.7	97.4	110.0	103.7
0330	Cast-in-Place Concrete	96.2	53.9	78.7	102.9	60.1	85.2	103.0	55.8	83.4	92.6	85.4	89.6	91.6	87.3	89.8	97.9	87.8	93.7
03	CONCRETE	91.6	52.5	72.3	95.8	63.2	79.7	95.4	55.4	75.7	95.9	91.0	93.5	95.0	83.4	89.3	102.1	95.9	99.1
04	MASONRY	116.2	45.1	72.2	90.0	54.5	68.0	127.9	48.7	78.9	122.1	97.9	107.1	118.5	79.0	94.1	103.6	100.6	101.7
05	METALS	89.1	73.1	84.2	90.0	82.5	87.7	90.4	76.6	86.2	96.1	113.8	101.6	97.2	107.3	100.3	96.9	110.5	101.1
06	WOOD, PLASTICS & COMPOSITES	87.2	55.3	69.2	84.6	66.7	74.5	82.8	53.4	66.2	95.3	88.0	91.2	88.1	71.5	78.7	96.0	95.4	95.7
07	THERMAL & MOISTURE PROTECTION	96.6	47.2	76.6	96.8	62.6	82.9	95.9	53.8	78.8	103.2	98.8	101.4	103.1	83.5	95.1	97.8	97.0	97.4
0																			

City Cost Indexes

DIVISION		MISSOURI																	
		COLUMBIA			FLAT RIVER			HANNIBAL			HARRISONVILLE			JEFFERSON CITY			JOPLIN		
		652			634			634			647			650 - 651			648		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	107.7	107.7		106.6	106.6		106.6	106.6		102.1	102.1		107.7	107.7		105.8	105.8	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.0	96.6	97.6	92.8	95.2	94.5	88.0	95.1	93.0	96.1	95.6	95.8	99.2	96.6	97.4	105.6	99.4	101.3
0310	Concrete Forming & Accessories	85.5	80.0	80.7	100.1	86.2	88.1	92.4	79.3	81.1	87.3	100.9	99.1	95.6	80.0	82.1	101.6	73.7	77.5
0320	Concrete Reinforcing	98.1	116.3	107.2	104.5	108.0	106.3	102.7	100.8	101.7	97.0	110.1	103.5	100.4	113.1	106.7	100.6	101.7	101.1
0330	Cast-in-Place Concrete	89.8	87.1	88.7	95.6	94.2	95.0	87.6	85.2	86.6	100.3	106.1	102.7	95.3	87.1	91.9	106.0	79.2	94.9
03	CONCRETE	86.8	90.6	88.7	98.8	94.2	96.6	92.2	86.8	89.5	98.5	104.8	101.6	91.9	90.0	91.0	101.7	81.7	91.8
04	MASONRY	133.2	88.7	105.7	119.0	80.5	95.2	113.5	97.9	103.8	98.3	105.3	102.6	97.0	88.7	91.9	96.6	86.8	90.5
05	METALS	97.1	119.7	104.1	96.0	115.8	102.1	96.1	113.5	101.5	97.3	111.5	101.7	96.6	118.4	103.3	100.0	102.2	100.7
06	WOOD, PLASTICS & COMPOSITES	95.4	76.3	84.6	103.2	84.5	92.7	93.3	75.5	83.2	92.5	99.8	96.6	102.0	76.3	87.5	107.5	71.8	87.4
07	THERMAL & MOISTURE PROTECTION	95.5	88.1	92.5	103.4	93.8	99.5	103.0	96.9	100.5	97.1	105.8	100.6	100.8	88.1	95.7	97.1	79.6	90.0
08	OPENINGS	94.7	93.3	94.4	96.9	98.8	97.4	97.0	84.3	94.0	96.1	102.9	97.7	94.2	92.5	93.8	97.2	78.2	92.7
0920	Plaster & Gypsum Board	85.3	75.5	78.7	103.8	84.1	90.4	96.7	74.7	81.8	92.5	99.6	97.3	89.2	75.5	79.9	103.5	70.7	81.2
0950, 0980	Ceilings & Acoustic Treatment	97.9	75.5	83.0	97.1	84.1	88.4	97.1	74.7	82.2	92.2	99.6	97.1	102.1	75.5	84.4	93.0	70.7	78.2
0960	Flooring	109.7	97.5	106.1	101.3	85.6	96.6	97.7	98.5	98.0	91.7	104.4	95.5	116.0	97.5	110.5	121.0	76.3	107.6
0970, 0990	Wall Finishes & Painting/Coating	102.4	78.8	88.2	102.3	80.0	88.9	102.3	102.8	102.6	101.1	105.3	103.6	99.6	78.8	87.1	95.8	76.5	84.2
09	FINISHES	97.5	81.6	88.6	102.5	84.1	92.3	100.2	83.8	91.1	97.5	101.7	99.9	101.7	81.6	90.5	106.1	74.5	88.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	95.6	99.1	100.0	94.3	98.8	100.0	88.8	97.8	100.0	93.1	98.6	100.0	95.6	99.1	100.0	89.6	97.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.9	97.8	99.0	95.0	97.6	96.1	95.0	97.6	96.1	95.1	100.5	97.2	99.9	98.7	99.4	100.1	72.7	89.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.4	86.6	92.2	102.4	104.0	103.2	96.8	82.9	89.6	100.4	99.7	100.1	104.3	86.6	95.1	91.5	69.7	80.1
MF2010	WEIGHTED AVERAGE	98.6	93.5	96.4	99.0	95.8	97.6	97.1	92.6	95.1	97.3	102.2	99.5	98.4	93.4	96.2	99.5	81.0	91.5

DIVISION		MISSOURI																	
		KANSAS CITY			KIRKSVILLE			POPLAR BLUFF			ROLLA			SEDALIA			SIKESTON		
		640 - 641			635			634			654 - 655			653			598		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	103.4	103.4		99.0	99.0		101.3	101.3		107.7	107.7		99.7	99.7		101.3	101.3	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.2	98.0	98.0	90.9	91.2	91.1	78.4	95.0	90.1	99.0	96.6	97.3	94.9	92.5	93.2	81.7	95.1	91.1
0310	Concrete Forming & Accessories	100.3	107.8	106.8	85.2	79.3	80.1	85.3	75.0	76.4	92.7	94.0	93.8	90.1	79.3	80.8	86.4	75.0	76.5
0320	Concrete Reinforcing	95.5	117.1	106.3	103.4	101.9	102.6	106.5	97.6	102.0	98.6	97.7	98.2	97.1	109.4	103.2	105.9	101.4	103.6
0330	Cast-in-Place Concrete	98.6	107.8	102.4	95.5	85.1	91.2	73.5	87.8	79.5	91.8	96.4	93.7	95.9	84.5	91.2	78.6	87.8	82.4
03	CONCRETE	97.8	109.7	103.7	110.2	86.4	98.5	86.0	84.6	85.3	88.6	96.5	92.5	101.1	87.6	94.4	89.6	85.3	87.5
04	MASONRY	100.4	109.1	105.8	125.6	88.7	102.8	117.1	79.1	93.6	109.4	89.4	97.0	115.2	86.6	97.5	116.8	79.1	93.5
05	METALS	107.7	114.9	109.9	95.7	105.2	98.6	96.3	102.9	98.3	96.5	111.9	101.3	95.1	109.3	99.5	96.6	104.4	99.0
06	WOOD, PLASTICS & COMPOSITES	106.7	107.5	107.1	81.1	76.3	78.4	80.3	71.5	75.3	103.0	94.9	98.5	95.4	76.3	84.6	81.9	71.5	76.0
07	THERMAL & MOISTURE PROTECTION	97.2	108.6	101.8	109.8	89.1	101.4	108.3	85.3	99.0	95.6	95.5	95.6	101.8	93.7	98.5	108.5	83.9	98.5
08	OPENINGS	103.5	109.8	105.0	102.0	85.6	98.1	103.0	77.9	97.1	94.7	90.4	93.7	99.0	87.3	96.2	103.0	78.9	97.3
0920	Plaster & Gypsum Board	100.2	107.5	105.1	91.8	75.5	80.7	92.3	70.6	77.5	87.2	94.7	92.3	80.4	75.5	77.1	94.1	70.6	78.1
0950, 0980	Ceilings & Acoustic Treatment	99.3	107.5	104.7	95.3	75.5	82.1	97.1	70.6	79.5	97.9	94.7	95.8	97.9	75.5	83.0	97.1	70.6	79.5
0960	Flooring	96.6	109.3	100.4	76.5	97.5	82.8	90.2	83.5	88.2	113.0	97.5	108.3	86.4	97.5	89.7	90.6	83.5	88.5
0970, 0990	Wall Finishes & Painting/Coating	101.1	112.6	108.0	97.6	80.4	87.2	97.1	74.8	83.7	102.4	102.8	102.7	102.4	102.4	102.4	97.1	74.8	83.7
09	FINISHES	101.4	108.5	105.4	100.0	81.7	89.8	99.6	75.1	85.9	98.8	95.5	96.9	95.7	83.7	89.0	100.3	75.1	86.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	101.3	100.3	100.0	89.0	97.8	100.0	92.4	98.5	100.0	91.4	98.3	100.0	91.5	98.3	100.0	92.4	98.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	106.7	102.7	95.1	97.1	95.9	95.1	96.0	95.4	95.0	98.0	96.2	94.9	93.8	94.5	95.1	96.1	95.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.0	100.1	101.0	97.0	82.9	89.6	97.2	103.9	100.7	96.6	86.6	91.4	98.2	99.7	99.0	96.3	103.9	100.3
MF2010	WEIGHTED AVERAGE	101.6	106.7	103.8	100.3	90.0	95.8	97.0	90.3	94.1	96.3	95.6	96.0	98.1	92.6	95.7	97.5	90.6	94.5

DIVISION		MISSOURI									MONTANA								
		SPRINGFIELD			ST. JOSEPH			ST. LOUIS			BILLINGS			BUTTE			GREAT FALLS		
		650 - 651			644 - 645			630 - 631			590 - 591			597			594		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	102.3	102.3		102.1	102.1		107.6	107.6		99.3	99.3		99.0	99.0		99.0	99.0	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.2	94.4	95.2	99.8	93.7	95.5	91.9	98.4	96.5	95.9	97.1	96.8	103.3	96.9	98.8	107.1	96.9	100.0
0310	Concrete Forming & Accessories	98.2	74.7	77.9	100.2	91.1	92.3	100.2	103.6	103.1	101.3	71.6	75.7	88.4	73.3	75.4	101.1	71.6	75.6
0320	Concrete Reinforcing	94.3	116.0	105.1	94.4	109.8	102.1	95.5	114.0	104.7	93.9	82.8	88.3	101.9	82.9	92.4	94.0	82.8	88.4
0330	Cast-in-Place Concrete	97.5	78.8	89.7	98.5	103.6	100.6	91.6	105.0	97.2	120.2	68.9	98.9	132.3	70.3	106.6	139.8	65.0	108.7
03	CONCRETE	97.7	84.6	91.2	97.5	99.5	98.5	94.5	106.8	100.5	106.9	73.6	90.5	110.6	74.9	93.0	115.9	72.2	94.3
04	MASONRY	89.5	87.2	88.1	100.1	96.7	98.0	99.7	112.5	107.6	117.9	75.0	91.4	113.3	77.9	91.4	117.5	76.7	92.3
05	METALS	101.2	107.5	103.1	103.7	110.7	105.9	101.9	120.5	107.7	107.5	91.0	102.4	100.6	91.1	97.7	103.8	91.1	99.9
06	WOOD, PLASTICS & COMPOSITES	103.4	72.8	86.1	107.5	89.7	97.4	103.1	100.8	101.8	99.5	70.0	82.8	86.6	72.5	78.6</			

City Cost Indexes

DIVISION		MONTANA																	
		HAVRE			HELENA			KALISPELL			MILES CITY			MISSOULA			WOLF POINT		
		595			596			599			593			598			592		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.0	99.0		99.0	99.0		99.0	99.0		99.0	99.0		99.0	99.0		99.0	99.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	111.0	96.7	100.9	100.1	96.6	97.7	93.4	96.8	95.8	99.9	96.3	97.4	85.8	96.6	93.4	118.0	96.4	102.9
0310	Concrete Forming & Accessories	81.6	69.1	70.8	104.4	66.7	71.9	91.6	71.5	74.3	99.6	67.6	72.0	91.6	71.5	74.2	92.2	67.8	71.2
0320	Concrete Reinforcing	102.7	82.8	92.8	106.8	82.8	94.8	104.6	83.4	94.0	102.3	82.8	92.6	103.6	83.4	93.5	103.7	82.8	93.3
0330	Cast-in-Place Concrete	142.5	61.8	109.0	106.9	64.3	89.2	114.9	64.0	93.8	125.8	61.6	99.1	97.5	66.2	84.5	140.8	62.0	108.1
03	CONCRETE	119.1	70.0	94.9	104.5	69.8	87.3	100.0	72.0	86.2	107.4	69.3	88.6	88.0	72.7	80.4	123.0	69.6	96.6
04	MASONRY	114.2	71.1	87.5	110.7	77.1	89.9	112.2	78.3	91.2	119.4	66.5	86.7	135.6	77.9	99.9	120.5	67.2	87.5
05	METALS	96.8	90.9	95.0	102.7	90.0	98.7	96.6	91.4	95.0	95.9	91.1	94.4	97.2	91.3	95.4	96.0	91.1	94.5
06	WOOD, PLASTICS & COMPOSITES	78.4	70.0	73.7	103.7	63.8	81.2	89.9	70.0	78.7	97.8	70.0	82.1	89.9	70.0	78.7	89.5	70.0	78.5
07	THERMAL & MOISTURE PROTECTION	108.3	69.4	92.5	105.4	72.2	91.9	107.7	74.3	94.1	108.0	66.8	91.3	107.4	80.6	96.5	108.7	67.1	91.8
08	OPENINGS	92.4	68.1	86.6	96.2	66.3	89.2	92.3	68.3	86.6	91.8	68.0	86.2	92.3	68.0	86.6	91.9	67.8	86.2
0920	Plaster & Gypsum Board	96.2	69.3	77.9	97.9	62.9	74.1	100.3	69.3	79.2	109.0	69.3	82.0	100.3	69.3	79.2	104.2	69.3	80.4
0950, 0980	Ceilings & Acoustic Treatment	107.0	69.3	81.9	109.7	62.9	78.5	107.0	69.3	81.9	106.1	69.3	81.6	107.0	69.3	81.9	106.1	69.3	81.6
0960	Flooring	101.3	75.5	93.6	106.1	60.2	92.4	105.7	75.5	96.7	110.7	71.5	99.0	105.7	75.5	96.7	107.1	71.5	96.5
0970, 0990	Wall Finishes & Painting/Coating	97.2	49.7	68.7	93.5	48.2	66.3	97.2	48.2	67.8	97.2	48.2	67.8	97.2	63.3	76.8	97.2	49.7	68.7
09	FINISHES	102.8	67.9	83.4	104.7	63.0	81.5	103.3	69.4	84.4	106.2	65.9	83.8	102.7	71.0	85.1	105.9	66.2	83.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	72.6	94.5	100.0	95.6	99.1	100.0	96.2	99.2	100.0	92.6	98.5	100.0	96.1	99.2	100.0	92.9	98.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.3	69.3	84.9	100.1	70.9	88.4	95.3	70.3	85.3	95.3	69.7	85.0	100.2	69.9	88.0	95.3	70.0	85.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.9	72.7	84.3	103.8	72.7	87.6	101.2	71.0	85.4	96.9	77.4	86.7	102.2	69.3	85.0	96.9	77.4	86.7
MF2010	WEIGHTED AVERAGE	100.6	74.2	89.1	102.0	75.1	90.2	98.4	76.3	88.8	99.5	74.7	88.7	99.4	76.4	89.4	101.7	74.9	90.0

DIVISION		NEBRASKA																	
		ALLIANCE			COLUMBUS			GRAND ISLAND			HASTINGS			LINCOLN			MCCOOK		
		693			686			689			689			683 - 685			690		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.5	97.5		101.4	101.4		101.4	101.4		101.4	101.4		101.4	101.4		101.4	101.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.8	98.4	98.6	99.1	92.0	94.1	103.8	92.8	96.1	102.6	92.0	95.2	93.6	92.8	93.0	102.1	91.9	95.0
0310	Concrete Forming & Accessories	88.3	57.7	61.9	95.9	68.1	71.9	95.4	74.0	76.9	98.5	73.6	77.0	97.5	68.9	72.8	93.9	57.3	62.3
0320	Concrete Reinforcing	110.1	85.0	97.6	101.7	76.9	89.3	101.1	76.8	89.0	101.1	77.5	89.3	99.2	76.3	87.7	103.1	76.5	89.8
0330	Cast-in-Place Concrete	109.4	61.3	89.4	114.9	61.3	92.6	121.6	68.6	99.6	121.6	64.6	97.9	99.8	71.0	87.9	117.6	60.6	94.0
03	CONCRETE	120.2	64.5	92.7	106.9	68.2	87.8	111.7	73.4	92.8	111.9	71.9	92.1	98.0	71.9	85.1	109.5	63.1	86.6
04	MASONRY	109.7	74.9	88.2	112.6	79.0	91.8	105.7	77.4	88.2	114.2	89.5	98.9	95.9	68.4	78.9	105.5	74.7	86.5
05	METALS	101.2	79.1	94.4	91.9	85.2	89.8	93.6	87.0	91.5	94.4	86.5	91.9	95.6	86.2	92.7	96.0	84.2	92.4
06	WOOD, PLASTICS & COMPOSITES	88.3	53.4	68.6	99.7	67.2	81.4	99.0	73.9	84.8	102.7	73.9	86.4	98.3	67.2	80.7	97.1	53.4	72.5
07	THERMAL & MOISTURE PROTECTION	106.4	69.5	91.4	104.4	70.7	90.7	104.5	74.2	92.2	104.5	85.4	96.8	100.4	70.1	88.1	100.8	67.4	87.2
08	OPENINGS	92.8	59.4	84.9	94.1	66.7	87.6	94.2	70.9	88.7	94.2	70.3	88.5	103.2	63.5	93.8	93.2	57.5	84.7
0920	Plaster & Gypsum Board	81.0	51.9	61.2	88.7	66.1	73.3	88.0	73.0	77.8	89.9	73.0	78.4	90.1	66.1	73.8	92.5	51.9	64.9
0950, 0980	Ceilings & Acoustic Treatment	98.5	51.9	67.5	93.3	66.1	75.2	93.3	73.0	79.8	93.3	73.0	79.8	99.3	66.1	77.2	94.3	51.9	66.1
0960	Flooring	104.5	83.6	98.2	102.5	102.2	102.4	102.3	109.2	104.4	103.4	102.2	103.1	107.6	85.1	100.9	101.6	83.6	96.2
0970, 0990	Wall Finishes & Painting/Coating	174.1	56.0	103.1	91.9	65.1	75.8	91.9	69.1	78.2	91.9	65.1	75.8	100.0	79.6	87.7	95.3	48.8	67.3
09	FINISHES	102.8	60.8	79.4	98.5	72.9	84.3	98.7	78.8	87.6	99.2	76.9	86.8	102.3	72.7	85.8	99.6	59.9	77.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	67.0	93.4	100.0	88.3	97.7	100.0	89.3	97.9	100.0	89.1	97.8	100.0	88.6	97.7	100.0	66.3	93.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.3	72.0	85.9	95.1	77.1	87.9	100.0	78.5	91.4	95.1	77.2	87.9	99.9	78.5	91.3	95.0	77.1	87.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	91.7	71.0	80.9	92.0	82.4	87.0	90.7	65.9	77.8	90.1	85.6	87.7	103.2	65.9	83.7	93.9	71.0	81.9
MF2010	WEIGHTED AVERAGE	100.4	71.6	87.9	97.5	77.9	88.9	99.1	77.8	89.9	98.5	81.2	90.9	99.5	75.3	89.0	98.1	72.1	86.8

DIVISION		NEBRASKA																		NEVADA					
		NORFOLK			NORTH PLATTE			OMAHA			VALENTINE			CARSON CITY			ELKO								
		687			691			680 - 681			692			897			898								
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL						
015433	CONTRACTOR EQUIPMENT		92.7	92.7		101.4	101.4		92.7	92.7		95.6	95.6		97.9	97.9		97.9	97.9						
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	82.3	91.1	88.5	103.4	92.0	95.4	86.4	91.8	90.2	86.4	95.9	93.1	78.7	99.6	93.4	61.9	98.4	87.5						
0310	Concrete Forming & Accessories	82.4	72.7	74.0	96.3	73.1	76.3	93.5	72.9	75.7	84.5	57.1	60.8	105.3	94.6	96.1	111.2	83.2	87.0						
0320	Concrete Reinforcing	101.8	66.6	84.3	102.5	77.4	90.0	104.1	76.9	90.5	103.1	66.3	84.8	107.5	118.0	112.7	106.9	113.9	110.4						
0330	Cast-in-Place Concrete	116.1	63.8	94.4	117.6	65.9	96.2	92.6	77.1	86.2	104.3	58.6	85.3	104.1	86.2	96.7	98.7	80.9	91.3						
03	CONCRETE	105.7	68.7	87.5	109.6	72.1	91.1	94.6	75.4	85.1	107.0	60.0	83.8	104.1	96.0	100.1	98.6	88.3	93.5						
04	MASONRY	118.7	78.7	93.9	93.2	89.5	90.9	98.9	79.9	87.1	105.3	74.8	86.4	116.6	89.3	99.7	114.9	73.1	89.0						
05	METALS	95.2	74.1	88.7	95.1	86.1	92.3	95.4	79.5	90.5	107.3	74.1	97.1	90.1	104.0	94.4	92.8	99.5	94.8						
06	WOOD, PLASTICS & COMPOSITES	82.8	73.4	77.5	99.1	73.9	84.9	91.2	72.1	80.5	82.8	52.9	65.9	91.6	96.6	94.4	99.4	83.7	90.6						
07	THERMAL & MOISTURE PROTECTION	104.4	74.9	92.4	100.8	84.1	94.0	100.0	79.8	91.8	101.6	69.1	88.4	102.7	91.2	98.0	99.0	76.6	89.9						
08	OPENINGS	9																							

City Cost Indexes

DIVISION		NEVADA									NEW HAMPSHIRE								
		ELY			LAS VEGAS			RENO			CHARLESTON			CLAREMONT			CONCORD		
		893			889 - 891			894 - 895			036			037			032 - 033		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.9	97.9		97.9	97.9		97.9	97.9		100.6	100.6		100.6	100.6		100.6	100.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	67.0	99.9	90.1	69.7	101.6	92.1	67.0	99.6	89.9	87.4	99.2	95.7	81.2	99.2	93.9	94.5	101.4	99.3
0310	Concrete Forming & Accessories	104.2	105.9	105.6	105.4	111.0	110.3	100.5	94.5	95.3	88.1	82.9	83.6	93.8	82.9	84.4	95.9	94.3	94.5
0320	Concrete Reinforcing	105.7	115.2	110.4	97.5	121.8	109.6	99.9	121.4	110.6	84.5	95.2	89.8	84.5	95.2	89.8	92.9	95.8	94.4
0330	Cast-in-Place Concrete	105.9	106.7	106.2	102.6	107.5	104.6	112.0	86.2	101.3	97.4	72.1	86.9	89.5	72.1	82.3	111.5	92.2	103.5
03	CONCRETE	106.6	107.6	107.1	101.8	111.4	106.6	106.3	96.6	101.5	99.5	81.6	90.6	91.5	81.6	86.6	106.0	93.7	100.0
04	MASONRY	119.0	104.2	109.9	108.1	102.8	104.8	114.2	89.3	98.8	87.8	82.3	84.4	87.3	82.3	84.2	97.6	102.1	100.4
05	METALS	92.7	104.8	96.4	99.8	109.3	102.7	94.2	105.3	97.6	95.2	90.6	93.8	95.2	90.6	93.8	101.2	94.0	99.0
06	WOOD, PLASTICS & COMPOSITES	90.3	106.3	99.3	89.2	110.4	101.2	85.2	96.6	91.6	86.9	92.3	90.0	93.3	92.3	92.7	94.8	93.3	93.9
07	THERMAL & MOISTURE PROTECTION	99.6	95.9	98.1	112.5	102.0	108.2	99.1	91.2	95.9	102.8	72.0	90.3	102.7	72.0	90.2	104.9	91.4	99.4
08	OPENINGS	100.5	99.6	100.3	99.6	117.9	104.0	98.6	104.2	99.9	102.6	78.0	96.8	103.8	78.0	97.7	104.1	88.4	100.4
0920	Plaster & Gypsum Board	90.0	106.4	101.1	87.8	110.7	103.4	82.0	96.4	91.8	94.7	91.4	92.5	95.8	91.4	92.8	98.4	92.4	94.4
0950, 0980	Ceilings & Acoustic Treatment	102.3	106.4	105.0	111.1	110.7	110.8	107.6	96.4	100.1	90.6	91.4	91.2	90.6	91.4	91.2	95.9	92.4	93.6
0960	Flooring	101.5	58.2	88.6	93.3	109.9	98.3	98.8	109.9	102.1	96.3	32.7	77.3	98.2	32.7	78.6	97.1	112.2	101.6
0970, 0990	Wall Finishes & Painting/Coating	104.2	123.6	115.9	107.2	123.6	117.0	104.2	82.5	91.2	95.4	46.7	66.2	95.4	46.9	66.3	95.1	97.5	96.5
09	FINISHES	98.9	99.4	99.2	98.4	112.2	106.1	98.0	96.2	97.0	94.9	71.3	81.8	95.1	71.3	81.9	95.9	98.0	97.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	65.0	93.0	100.0	106.3	101.3	100.0	92.0	98.4	100.0	90.0	98.0	100.0	90.0	98.0	100.0	104.8	101.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.7	106.7	101.3	100.2	105.1	102.1	100.0	81.5	92.6	95.2	40.4	73.2	95.2	40.5	73.3	99.9	86.1	94.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.4	109.7	104.3	102.7	120.6	112.0	98.8	97.4	98.0	99.6	54.1	75.8	99.6	54.1	75.8	99.6	80.4	89.6
MF2010	WEIGHTED AVERAGE	98.7	103.4	100.8	100.2	109.4	104.2	99.0	93.8	96.7	96.9	70.1	85.2	96.0	70.1	84.7	100.8	92.3	97.1

DIVISION		NEW HAMPSHIRE									NEW JERSEY		
		KEENE			LITTLETON			MANCHESTER			NASHUA		
		038			035			038			03C		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.6	100.6		100.6	100.6		100.6	100.6		100.6	100.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	95.2	99.5	98.2	81.3	99.5	94.1	93.6	101.4	99.1	96.5	101.4	100.0
0310	Concrete Forming & Accessories	92.6	84.9	85.9	103.4	84.9	87.4	98.4	94.8	95.3	100.3	94.8	95.5
0320	Concrete Reinforcing	84.5	95.3	89.9	85.2	95.3	90.3	106.7	95.8	101.3	105.5	95.8	100.7
0330	Cast-in-Place Concrete	97.9	74.4	88.1	87.9	74.4	82.3	111.9	115.3	113.3	92.6	115.3	102.0
03	CONCRETE	99.2	83.2	91.3	91.0	83.3	87.2	108.6	101.9	105.3	96.5	101.4	100.6
04	MASONRY	91.7	85.9	88.1	96.9	85.9	90.1	94.9	102.1	99.4	91.4	102.1	98.0
05	METALS	95.8	91.2	94.4	95.9	91.2	94.4	103.8	94.5	100.9	100.8	94.5	98.9
06	WOOD, PLASTICS & COMPOSITES	91.6	92.3	92.0	102.9	92.3	96.9	95.1	93.3	94.1	101.4	93.3	96.8
07	THERMAL & MOISTURE PROTECTION	103.2	75.0	91.8	102.8	73.5	90.9	106.9	94.9	102.0	103.6	94.9	100.1
08	OPENINGS	101.1	82.9	96.8	104.8	78.7	98.6	106.9	88.4	102.6	105.8	88.4	101.6
0920	Plaster & Gypsum Board	95.1	91.4	92.6	108.4	91.4	96.9	98.7	92.4	94.4	103.8	92.4	96.1
0950, 0980	Ceilings & Acoustic Treatment	90.6	91.4	91.2	90.6	91.4	91.2	98.6	92.4	94.5	101.4	92.4	95.4
0960	Flooring	97.9	53.6	84.7	106.2	32.7	84.2	98.2	112.2	102.4	100.9	112.2	104.2
0970, 0990	Wall Finishes & Painting/Coating	95.4	46.7	66.2	95.4	61.2	74.9	98.2	97.5	97.8	95.4	97.5	96.7
09	FINISHES	96.7	76.2	85.3	99.0	73.8	85.0	98.5	98.0	98.2	101.0	98.0	99.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	91.2	98.2	100.0	99.2	99.8	100.0	104.8	101.0	100.0	104.8	101.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	44.2	74.7	95.2	65.2	83.2	99.9	86.2	94.4	100.1	86.2	94.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.6	64.7	81.4	100.8	57.3	78.1	101.6	80.4	90.6	102.2	80.4	90.8
MF2010	WEIGHTED AVERAGE	97.4	74.0	87.2	97.1	77.2	88.4	102.1	93.6	98.4	100.6	93.6	97.6

DIVISION		NEW JERSEY									JERSEY CITY		
		CAMDEN			DOVER			ELIZABETH			HACKENSACK		
		081			078			072			076		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.8	98.8		100.6	100.6		100.6	100.6		98.8	98.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.1	104.7	103.0	108.2	105.4	106.3	112.7	105.4	107.6	108.9	105.5	106.5
0310	Concrete Forming & Accessories	101.7	128.4	124.7	97.4	129.0	124.7	109.3	129.0	126.3	97.4	128.9	124.6
0320	Concrete Reinforcing	103.8	121.8	112.8	80.0	128.6	104.3	80.0	128.6	104.3	103.8	128.6	116.2
0330	Cast-in-Place Concrete	81.6	132.1	102.6	102.2	127.3	112.6	87.8	127.3	104.2	99.9	127.3	111.3
03	CONCRETE	94.1	127.3	110.4	99.7	127.4	113.3	95.3	127.4	111.1	97.8	127.3	112.4
04	MASONRY	89.7	125.4	111.8	87.3	125.9	111.2	101.2	125.9	116.5	90.8	125.9	112.5
05	METALS	100.7	106.6	102.5	95.6	113.6	101.2	97.1	113.6	102.2	95.7	113.4	101.2
06	WOOD, PLASTICS & COMPOSITES	104.2	130.2	118.9	101.5	130.2	117.7	117.1	130.2	124.5	101.5	130.2	117.7
07	THERMAL & MOISTURE PROTECTION	104.5	122.7	111.9	101.5	130.6	113.4	101.7	130.6	113.5	101.3	123.3	110.3
08	OPENINGS	104.6	125.4	109.5	108.8	127.9	113.4	106.9	127.9	111.9	106.2	127.9	111.4
0920	Plaster & Gypsum Board	102.8	130.5	121.6	99.9	130.5	120.7	107.7	130.5	123.2	99.9	130.5	120.7
0950, 0980	Ceilings & Acoustic Treatment	99.7	130.5	120.2	88.6	130.5	116.5	90.6	130.5	117.2	88.6	130.5	116.5
0960	Flooring	98.7	150.6	114.2	96.8	172.3	119.4	101.2	172.3	122.5	96.8	172.3	119.4
0970, 0990	Wall Finishes & Painting/Coating	93.0	117.3	107.6	94.6	119.3	109.4	94.6	119.3	109.4	94.6	119.3	109.4
09	FINISHES	100.0	132.5	118.1	97.1	135.5	118.5	100.4	135.5	119.9	96.9	135.5	118.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	110.5	102.1	100.0	113.6	102.7	100.0	113.6	102.7	100.0	113.6	102.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	119.7	107.9	99.6	123.4	109.1	100.0	122.8	109.1	99.6	123.3	109.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.9	141.4	120.6	90.9	137.6	115.3	91.5	137.6	115.6	90.9	139.7	116.4
MF2010	WEIGHTED AVERAGE	99.4	123.6	109.9	98.7	125.4	110.3	99.5	125.3	110.7	98.4	125.5	110.2

City Cost Indexes

DIVISION		NEW JERSEY																	
		NEW BRUNSWICK			NEWARK			PATERSON			POINT PLEASANT			SUMMIT			TRENTON		
		088 - 089			070 - 071			074 - 075			087			079			085 - 086		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.4	98.4		100.6	100.6		109.6	109.6		98.4	98.4		109.6	109.6		98.4	98.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	111.8	105.3	107.3	114.4	105.4	108.1	110.9	105.5	107.1	113.5	105.3	107.7	110.1	105.4	106.8	96.6	105.3	102.7
0310	Concrete Forming & Accessories	104.6	128.9	125.6	97.2	129.0	124.6	99.4	128.9	124.8	99.3	120.3	117.4	100.2	129.0	125.0	99.9	128.6	124.6
0320	Concrete Reinforcing	80.0	128.6	104.3	103.3	128.6	116.0	103.8	128.6	116.2	80.0	129.5	104.2	80.0	128.6	104.3	103.3	115.7	109.5
0330	Cast-in-Place Concrete	103.9	132.3	115.7	109.6	127.3	117.0	101.6	127.3	112.3	103.9	128.4	114.1	84.9	127.3	102.5	99.5	132.0	113.0
03	CONCRETE	109.8	128.9	119.3	106.9	127.4	117.0	103.4	127.3	115.2	109.5	123.7	116.5	92.3	127.4	109.6	102.3	126.3	114.1
04	MASONRY	96.6	125.9	114.7	93.4	125.9	113.5	87.8	125.9	111.4	86.4	124.6	110.0	89.3	125.9	112.0	92.1	125.4	112.7
05	METALS	95.7	111.2	100.4	102.8	113.6	106.1	95.7	113.5	101.2	95.7	110.7	100.3	95.6	113.6	101.1	100.4	105.7	102.0
06	WOOD, PLASTICS & COMPOSITES	108.9	130.1	120.9	99.0	130.2	116.6	104.1	130.2	118.8	101.6	119.1	111.5	105.3	130.2	119.3	101.4	130.1	117.6
07	THERMAL & MOISTURE PROTECTION	104.8	129.9	115.0	102.0	130.6	113.6	101.6	123.3	110.4	104.8	122.1	111.8	101.9	130.6	113.6	104.2	123.1	111.9
08	OPENINGS	97.2	127.9	104.5	107.5	127.9	112.3	111.6	127.9	115.4	99.1	122.2	104.6	113.6	127.9	117.0	106.7	124.4	110.9
0920	Plaster & Gypsum Board	103.9	130.5	122.0	99.9	130.5	120.7	103.2	130.5	121.8	99.4	119.1	112.8	101.7	130.5	121.3	99.9	130.5	120.7
0950, 0980	Ceilings & Acoustic Treatment	88.9	130.5	116.6	102.4	130.5	121.1	99.5	130.5	120.1	88.9	119.1	109.0	88.6	130.5	116.5	101.4	130.5	120.8
0960	Flooring	100.0	172.3	121.6	98.5	172.3	120.6	97.7	172.3	120.0	97.8	150.6	113.6	98.0	172.3	120.2	99.3	172.3	121.1
0970, 0990	Wall Finishes & Painting/Coating	93.0	119.3	108.8	96.0	119.3	110.0	94.6	119.3	109.4	93.0	117.3	107.6	94.6	119.3	109.4	98.3	117.3	109.7
09	FINISHES	99.7	135.4	119.6	98.6	135.5	119.1	100.0	135.5	119.8	98.5	125.9	113.7	98.0	135.5	118.9	100.1	136.0	120.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	113.4	102.7	100.0	113.6	102.7	100.0	113.6	102.7	100.0	104.2	100.8	100.0	113.6	102.7	100.0	110.4	102.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.6	122.9	108.9	100.0	122.8	109.1	100.0	123.4	109.4	99.6	122.5	108.7	99.6	122.8	108.9	100.0	122.5	109.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.4	137.6	116.5	99.2	139.7	120.3	95.5	137.6	117.5	92.7	131.5	112.9	91.5	137.6	115.6	101.4	138.7	120.8
MF2010	WEIGHTED AVERAGE	99.7	125.2	110.8	101.9	125.6	112.2	100.2	125.2	111.1	99.2	121.4	108.8	98.7	125.3	110.3	100.8	124.0	110.9

DIVISION		NEW MEXICO																	
		VINELAND			ALBUQUERQUE			CARRIZOZO			CLOVIS			FARMINGTON			GALLUP		
		080,083			870 - 872			883			887			874			879		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.4	98.4		109.6	109.6		109.6	109.6		109.6	109.6		109.6	109.6		109.6	109.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	102.7	104.7	104.1	82.2	104.1	97.6	102.9	104.1	103.7	91.2	104.1	100.2	88.4	104.1	99.4	96.0	104.1	101.7
0310	Concrete Forming & Accessories	96.8	128.4	124.1	101.4	65.0	70.0	99.2	65.0	69.7	99.1	64.9	69.6	101.4	65.0	70.0	101.5	65.0	70.0
0320	Concrete Reinforcing	79.1	118.5	98.7	100.5	71.1	85.8	109.9	71.1	90.5	111.2	71.1	91.2	109.9	71.1	90.5	105.2	71.1	88.2
0330	Cast-in-Place Concrete	90.7	132.2	107.9	96.9	71.2	86.2	95.4	71.2	85.3	95.3	71.1	85.3	97.8	71.2	86.8	92.1	71.2	83.4
03	CONCRETE	97.6	126.7	111.9	101.9	69.4	85.9	119.1	69.4	94.6	107.6	69.3	88.7	105.7	69.4	87.8	112.5	69.4	91.2
04	MASONRY	87.9	125.4	111.1	99.5	60.6	75.4	101.6	60.6	76.2	101.7	60.6	76.2	106.3	60.6	78.0	95.4	60.6	73.8
05	METALS	95.6	106.0	98.8	103.8	87.9	98.9	98.4	87.9	95.2	98.1	87.8	94.9	101.4	87.9	97.2	100.6	87.9	96.6
06	WOOD, PLASTICS & COMPOSITES	98.5	130.2	116.4	92.8	65.5	77.4	88.9	65.5	75.7	88.9	65.5	75.7	92.9	65.5	77.4	92.9	65.5	77.4
07	THERMAL & MOISTURE PROTECTION	104.4	123.2	112.1	99.4	71.8	88.2	100.7	71.8	89.0	99.6	71.8	88.3	99.6	71.8	88.3	100.5	71.8	88.8
08	OPENINGS	98.6	125.0	104.9	101.4	68.5	93.6	98.6	68.5	91.5	98.8	68.5	91.6	104.0	68.5	95.6	104.1	68.5	95.7
0920	Plaster & Gypsum Board	98.0	130.5	120.1	88.3	64.1	71.8	75.4	64.1	67.7	75.4	64.1	67.7	81.6	64.1	69.7	81.6	64.1	69.7
0950, 0980	Ceilings & Acoustic Treatment	88.9	130.5	116.6	106.3	64.1	78.2	104.2	64.1	77.5	104.2	64.1	77.5	103.1	64.1	77.2	103.1	64.1	77.2
0960	Flooring	97.1	150.6	113.1	100.2	67.2	90.3	100.2	67.2	90.4	100.2	67.2	90.4	101.7	67.2	91.4	101.7	67.2	91.4
0970, 0990	Wall Finishes & Painting/Coating	93.0	117.3	107.6	109.1	68.1	84.4	102.9	68.1	82.0	102.9	68.1	82.0	102.9	68.1	82.0	102.9	68.1	82.0
09	FINISHES	97.2	132.5	116.8	98.3	65.5	80.0	99.0	65.5	80.3	97.6	65.5	79.7	96.9	65.5	79.4	98.1	65.5	79.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	110.5	102.1	100.0	76.3	95.2	100.0	76.3	95.2	100.0	76.3	95.2	100.0	76.3	95.2	100.0	76.3	95.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.6	119.6	107.6	100.2	70.7	88.4	97.2	70.7	86.6	97.2	70.5	86.5	100.1	70.7	88.3	97.1	70.7	86.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.7	141.4	118.1	88.5	72.9	80.4	90.6	72.9	81.4	88.1	72.9	80.2	86.8	72.9	79.6	86.0	72.9	79.2
MF2010	WEIGHTED AVERAGE	97.5	123.4	108.8	99.2	73.6	88.0	100.1	73.6	88.5	98.1	73.5	87.4	99.7	73.6	88.3	99.3	73.6	88.1

DIVISION		NEW MEXICO																	
		LAS CRUCES			LAS VEGAS			ROSWELL			SANTA FE			SOCORRO			TRUTH/CONSEQUENCES		
		877			877			882			878			878			879		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		86.0	86.0		109.6	109.6		109.6	109.6		109.6	109.6		109.6	109.6		86.1	86.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.6	83.8	86.1	87.8	104.1	99.2	93.3	104.1	100.9	92.9	104.1	100.7	84.3	104.1	98.2	101.9	83.8	89.2
0310	Concrete Forming & Accessories	95.6	63.8	68.2	101.4	65.0	70.0	99.2	65.0	69.7	100.1	65.0	69.8	101.5	65.0	70.0	98.7	63.8	68.6
0320	Concrete Reinforcing	107.3	71.0	89.1	106.9	71.1	89.0	111.2	71.1	91.2	106.0	71.1	88.6	109.1	71.1	90.1	102.8	71.0	86.9
0330	Cast-in-Place Concrete	89.9	63.7	79.0	95.2	71.2	85.2	95.3	71.2	85.3	103.2	71.2	89.9	93.2	71.2	84.1	102.1	63.7	86.1
03	CONCRETE	86.1	65.9	76.1	103.1	69.4	86.4	108.3	69.4	89.1	105.6	69.4	87.7	102.0	69.4	85.9	95.1	65.9	80.7
04	MASONRY	97.5	60.2	74.4	95.6	60.6	73.9	112.2	60.6	80.3	99.5	60.6	75.4	95.5	60.6	73.9	93.1	60.2	72.8
05	METALS	97.1	81.3	92.2	100.3	87.9	96.4	99.3	87.9	95.8	97.7	87.9	94.7	100.6	87.9	96.6	100.1	81.4	94.3
06	WOOD, PLASTICS & COMPOSITES	78.8	64.4	70.7	92.9	65.5	77.4	88.9	65.5	75.7	94.6	65.5	78						

City Cost Indexes

DIVISION		NEW MEXICO						NEW YORK											
		TUCUMCARI			ALBANY			BINGHAMTON			BRONX			BROOKLYN			BUFFALO		
		884			120 - 122			137 - 139			104			112			140 - 142		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		109.6	109.6		113.5	113.5		114.4	114.4		112.8	112.8		114.1	114.1		97.0	97.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.8	104.1	100.1	75.0	107.1	97.5	92.8	94.3	93.9	110.9	123.1	119.5	117.0	128.4	125.0	98.8	98.3	98.4
0310	Concrete Forming & Accessories	99.1	64.9	69.6	100.7	96.1	96.7	102.2	83.3	85.9	103.3	171.7	162.3	108.6	171.2	162.6	97.4	115.5	113.1
0320	Concrete Reinforcing	109.0	71.1	90.1	105.6	106.3	106.0	93.5	96.4	94.9	96.7	184.6	140.6	94.9	184.6	139.7	102.1	103.0	102.5
0330	Cast-in-Place Concrete	95.3	71.1	85.3	88.1	100.9	93.4	100.9	127.9	112.1	94.6	173.8	127.5	103.0	172.0	131.7	105.5	119.2	111.2
03	CONCRETE	106.7	69.3	88.3	101.0	100.3	100.6	96.2	102.7	99.4	96.5	173.2	134.4	108.3	172.0	139.7	104.6	113.7	109.1
04	MASONRY	112.9	60.6	80.5	90.9	100.3	96.7	105.8	126.6	118.7	94.3	176.4	145.1	116.4	176.4	153.5	107.3	119.6	114.9
05	METALS	98.1	87.8	94.9	101.3	109.5	103.9	96.0	118.2	102.9	100.8	149.3	115.8	104.4	140.3	115.4	99.5	95.6	98.3
06	WOOD, PLASTICS & COMPOSITES	88.9	65.5	75.7	97.7	93.6	95.4	107.3	79.3	91.5	100.1	171.4	140.4	109.3	171.1	144.1	98.7	115.2	108.0
07	THERMAL & MOISTURE PROTECTION	99.5	71.8	88.3	99.4	96.7	98.3	106.9	96.3	102.6	108.5	163.2	130.7	108.9	162.7	130.8	101.5	110.4	105.1
08	OPENINGS	98.5	68.5	91.4	99.9	92.0	98.0	90.7	81.6	88.5	87.0	172.2	107.1	88.0	166.5	106.6	91.8	103.3	94.6
0920	Plaster & Gypsum Board	75.4	64.1	67.7	105.0	93.1	96.9	111.6	78.2	88.9	105.4	173.3	151.6	106.9	173.3	152.1	103.2	115.4	111.5
0950, 0980	Ceilings & Acoustic Treatment	104.2	64.1	77.5	95.9	93.1	94.0	94.6	78.2	83.7	82.8	173.3	143.0	90.2	173.3	145.5	101.6	115.4	110.8
0960	Flooring	100.2	67.2	90.4	97.0	105.2	99.4	106.2	93.1	102.3	96.6	185.6	123.2	113.2	185.6	134.8	101.0	120.1	106.7
0970, 0990	Wall Finishes & Painting/Coating	102.9	68.1	82.0	96.8	89.4	92.4	93.3	95.3	94.5	97.9	148.0	128.0	124.2	148.0	138.5	102.4	112.5	108.5
09	FINISHES	97.6	65.5	79.7	97.8	96.7	97.2	96.7	84.9	90.1	95.3	172.0	138.1	111.3	171.8	145.0	101.0	116.9	109.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	76.3	95.2	100.0	96.0	99.2	100.0	93.5	98.7	100.0	132.7	106.6	100.0	132.0	106.4	100.0	106.1	101.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.2	70.5	86.5	100.0	98.8	99.5	100.4	87.3	95.1	100.2	164.7	126.1	99.8	164.4	125.7	100.0	97.1	98.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.6	72.9	81.4	96.0	99.3	97.7	98.9	107.9	103.6	96.1	175.0	137.3	98.7	175.0	138.5	97.5	101.9	99.8
MF2010	WEIGHTED AVERAGE	98.8	73.5	87.8	98.6	100.2	99.3	98.1	99.4	98.6	98.0	163.9	126.7	102.6	162.9	128.9	99.7	105.8	102.4

DIVISION		NEW YORK											
		ELMIRA			FAR ROCKAWAY			FLUSHING			GLENS FALLS		
		148 - 149			105			113			105		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		116.0	116.0		114.1	114.1		114.1	114.1		113.5	113.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	93.3	94.3	94.0	120.2	128.4	125.9	120.2	128.4	126.0	65.2	106.7	94.3
0310	Concrete Forming & Accessories	83.9	86.3	86.0	94.9	171.2	160.8	98.7	171.2	161.3	87.1	86.9	86.9
0320	Concrete Reinforcing	100.5	90.6	95.6	94.9	184.6	139.7	96.5	184.6	140.5	97.0	94.1	95.5
0330	Cast-in-Place Concrete	94.7	96.4	95.4	111.4	172.0	136.6	111.4	172.0	136.6	81.7	96.9	88.0
03	CONCRETE	95.0	92.3	93.7	114.3	172.0	142.8	114.9	172.0	143.1	89.9	92.6	91.3
04	MASONRY	101.4	93.7	96.6	119.7	176.4	154.8	113.9	176.4	152.6	90.1	93.2	92.0
05	METALS	95.4	114.7	101.3	104.4	140.3	115.5	104.4	140.3	115.5	94.8	105.1	98.0
06	WOOD, PLASTICS & COMPOSITES	85.3	84.9	85.5	92.2	171.1	136.7	97.1	171.1	138.8	86.1	84.9	85.4
07	THERMAL & MOISTURE PROTECTION	102.2	84.1	94.8	108.8	162.7	130.7	108.9	162.7	130.7	93.0	92.8	92.9
08	OPENINGS	92.4	83.8	90.3	86.7	166.5	105.6	86.7	166.5	105.6	91.3	84.5	89.7
0920	Plaster & Gypsum Board	100.2	84.2	89.3	95.1	173.3	148.3	97.8	173.3	149.1	95.2	84.2	87.7
0950, 0980	Ceilings & Acoustic Treatment	93.4	84.2	87.2	78.7	173.3	141.6	78.7	173.3	141.6	85.9	84.2	84.8
0960	Flooring	92.9	93.1	93.0	108.5	185.6	131.6	110.0	185.6	132.6	86.1	105.2	91.8
0970, 0990	Wall Finishes & Painting/Coating	101.7	87.6	93.2	124.2	148.0	138.5	124.2	148.0	138.5	94.1	89.3	91.2
09	FINISHES	96.1	87.4	91.3	106.4	171.8	142.8	107.1	171.8	143.1	89.1	89.8	89.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.4	98.7	100.0	132.0	106.4	100.0	132.0	106.4	100.0	92.7	98.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.3	87.8	92.3	94.9	164.4	122.8	94.9	164.4	122.8	95.4	92.0	94.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.5	96.9	96.2	106.1	175.0	142.1	106.1	175.0	142.1	91.1	99.3	95.4
MF2010	WEIGHTED AVERAGE	95.9	93.1	94.7	102.4	162.9	128.7	102.3	162.9	128.7	92.6	95.0	93.6

DIVISION		NEW YORK											
		JAMESTOWN			KINGSTON			LONG ISLAND CITY			MONTICELLO		
		147			124			111			127		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.0	94.0		114.1	114.1		114.1	114.1		114.1	114.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	94.5	93.8	94.0	122.1	124.3	123.7	118.1	128.4	125.3	117.5	124.2	122.2
0310	Concrete Forming & Accessories	83.9	81.2	81.6	88.7	106.0	103.6	103.1	171.2	161.9	95.7	105.0	103.7
0320	Concrete Reinforcing	100.7	98.6	99.6	97.4	140.6	119.0	94.9	184.6	139.7	96.6	140.4	118.5
0330	Cast-in-Place Concrete	98.3	91.3	95.4	110.4	131.3	119.1	106.3	172.0	133.6	103.4	126.8	113.1
03	CONCRETE	98.0	88.0	93.0	112.5	120.8	116.6	110.7	172.0	140.9	107.2	118.8	112.9
04	MASONRY	109.1	91.1	98.0	104.0	136.8	124.3	113.3	176.4	152.3	98.0	131.0	118.4
05	METALS	92.7	90.9	92.2	103.3	116.5	107.4	104.4	140.3	115.4	103.3	116.1	107.2
06	WOOD, PLASTICS & COMPOSITES	84.8	78.6	81.3	87.3	98.6	93.7	103.3	171.1	141.5	95.2	98.6	97.1
07	THERMAL & MOISTURE PROTECTION	101.6	84.0	94.5	114.3	136.3	123.3	108.8	162.7	130.7	114.0	134.0	122.1
08	OPENINGS	92.2	82.5	89.9	92.8	117.5	98.7	86.7	166.5	105.6	88.5	117.5	95.4
0920	Plaster & Gypsum Board	93.2	77.7	82.6	97.2	98.6	98.1	102.6	173.3	150.7	99.5	98.6	98.9
0950, 0980	Ceilings & Acoustic Treatment	90.7	77.7	82.0	74.3	98.6	90.5	78.7	173.3	141.6	74.3	98.6	90.5
0960	Flooring	95.9	89.7	94.1	103.1	73.8	94.4	111.4	185.6	133.6	105.4	73.8	95.9
0970, 0990	Wall Finishes & Painting/Coating	103.0	91.3	96.0	125.9	113.8	118.6	124.2	148.0	138.5	125.9	113.8	118.6
09	FINISHES	95.6	83.0	88.6	103.7	98.4	100.7	107.9	171.8	143.5	104.2	97.8	100.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	94.8	99.0	100.0	109.7	101.9	100.0	132.0	106.4	100.0	108.9	101.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	84.6	91.0	95.3	121.1	105.6	99.8	164.4	125.7	95.3	117.9	104.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.3	90.4	92.3	92.7	113.7	103.6	97.5	175.0	137.9	92.7	113.7	103.6
MF2010	WEIGHTED AVERAGE	96.0	87.8	92.4	100.7	118.3	108.4	102.2	162.9	128.6	99.4	116.5	106.8

City Cost Indexes

DIVISION		NEW YORK																	
		NEW YORK			NIAGARA FALLS			PLATTSBURGH			POUGHKEEPSIE			QUEENS			RIVERHEAD		
		100 - 102			143			129			125 - 126			110			119		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		113.2	113.2		94.0	94.0		99.2	99.2		114.1	114.1		114.1	114.1		114.1	114.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	119.6	123.8	122.5	96.6	95.4	95.8	89.9	102.7	98.9	118.3	124.0	122.3	113.4	128.4	123.9	111.3	127.3	122.5
0310	Concrete Forming & Accessories	107.7	179.3	169.5	83.9	113.2	109.2	91.9	83.8	84.9	88.7	148.2	140.0	91.7	171.2	160.3	96.0	144.5	137.9
0320	Concrete Reinforcing	102.4	184.7	143.5	99.3	99.3	99.3	101.3	93.6	97.5	97.4	140.9	119.1	96.5	184.6	140.5	96.7	184.4	140.5
0330	Cast-in-Place Concrete	106.4	179.2	136.7	101.6	118.7	108.7	100.1	92.7	97.0	106.9	127.3	115.4	97.9	172.0	128.7	96.3	165.6	125.0
03	CONCRETE	106.7	178.5	142.1	100.2	111.7	105.9	104.1	88.4	96.3	109.6	138.2	123.7	103.3	172.0	137.2	100.8	157.8	128.9
04	MASONRY	104.1	178.4	150.0	117.3	118.8	118.2	85.9	87.3	86.8	97.8	128.1	116.6	107.8	176.4	150.2	115.8	166.0	146.9
05	METALS	114.1	149.5	125.0	95.4	92.3	94.5	99.2	85.5	95.0	103.3	118.5	108.0	104.4	140.3	115.4	106.3	138.2	116.1
06	WOOD, PLASTICS & COMPOSITES	104.6	180.6	147.5	84.7	110.9	99.5	94.1	81.9	87.2	87.3	158.2	127.3	88.8	171.1	135.3	94.0	141.5	120.8
07	THERMAL & MOISTURE PROTECTION	108.5	165.3	131.5	101.7	108.0	104.3	108.4	89.8	100.9	114.3	138.8	124.2	108.5	162.7	130.5	109.2	154.3	127.5
08	OPENINGS	92.6	177.5	112.7	92.2	100.2	94.1	98.8	80.1	94.4	92.8	149.1	106.2	86.7	166.5	105.6	86.7	150.3	101.8
0920	Plaster & Gypsum Board	112.2	182.7	160.2	93.2	111.0	105.3	119.4	80.6	93.0	97.2	160.0	139.9	94.8	173.3	148.2	96.1	142.7	127.8
0950, 0980	Ceilings & Acoustic Treatment	101.5	182.7	155.5	90.7	111.0	104.2	100.8	80.6	87.4	74.3	160.0	131.3	78.7	173.3	141.6	78.5	142.7	121.3
0960	Flooring	97.6	185.6	123.9	95.9	113.8	101.3	109.9	105.2	108.5	103.1	148.0	116.6	107.6	185.6	130.9	108.5	145.3	119.5
0970, 0990	Wall Finishes & Painting/Coating	97.9	156.4	133.1	103.0	109.7	107.0	123.3	76.4	95.1	125.9	113.8	118.6	124.2	148.0	138.5	124.2	148.0	138.5
09	FINISHES	101.2	178.9	144.5	95.7	113.6	105.7	100.9	86.4	92.9	103.5	146.3	127.3	105.3	171.8	142.3	105.5	143.7	126.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	137.1	107.4	100.0	104.7	100.9	100.0	48.9	89.8	100.0	113.3	102.7	100.0	132.0	106.4	100.0	125.1	105.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	165.7	126.4	95.2	97.1	95.9	95.3	92.0	94.0	95.3	117.9	104.4	99.8	164.4	125.7	100.0	151.8	120.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	104.2	175.0	141.1	92.9	99.3	96.3	89.2	90.4	89.8	92.7	113.7	103.6	98.0	175.0	138.2	99.7	135.8	118.5
MF2010	WEIGHTED AVERAGE	103.8	166.4	131.1	96.9	103.9	100.0	97.3	88.4	93.4	100.0	127.5	112.0	100.8	162.9	127.8	101.4	146.6	121.1

DIVISION		NEW YORK																	
		ROCHESTER			SCHENECTADY			STATEN ISLAND			SUFFERN			SYRACUSE			UTICA		
		144 - 146			123			103			109			130 - 132			133 - 135		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		116.4	116.4		113.5	113.5		112.8	112.8		112.8	112.8		113.5	113.5		113.5	113.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	77.8	109.6	100.2	74.9	107.1	97.5	122.7	123.1	123.0	113.8	119.1	117.5	91.8	106.6	102.2	70.8	104.5	94.4
0310	Concrete Forming & Accessories	104.8	92.4	94.1	103.1	96.1	97.1	93.0	171.7	160.9	102.1	131.2	127.2	101.1	91.2	92.5	102.4	82.2	85.0
0320	Concrete Reinforcing	101.9	90.7	96.3	96.0	106.3	101.2	96.7	184.6	140.6	95.3	140.9	118.1	94.4	94.8	94.6	94.4	91.9	93.2
0330	Cast-in-Place Concrete	97.6	98.9	98.1	98.6	100.9	99.5	105.7	173.8	134.0	102.5	134.8	115.9	93.8	105.4	98.6	85.8	98.3	91.0
03	CONCRETE	107.3	95.2	101.3	104.5	100.3	102.4	107.6	173.2	140.0	102.4	133.3	117.6	99.5	97.5	98.6	97.8	90.6	94.2
04	MASONRY	100.2	98.6	99.2	88.1	100.3	95.7	106.7	176.4	149.8	99.4	138.2	123.4	98.1	106.3	103.2	90.0	97.7	94.8
05	METALS	101.4	104.5	102.3	98.8	109.5	102.1	98.7	149.3	114.3	98.7	118.1	104.7	99.5	105.0	101.2	97.5	103.8	99.5
06	WOOD, PLASTICS & COMPOSITES	103.8	90.6	96.4	106.0	93.6	99.0	87.8	171.4	135.0	99.7	131.7	117.7	103.7	87.6	94.6	103.7	79.4	90.0
07	THERMAL & MOISTURE PROTECTION	100.5	98.0	99.5	94.2	96.7	95.3	108.8	163.2	130.9	109.3	140.9	122.1	102.5	97.9	100.6	90.9	94.4	92.3
08	OPENINGS	96.7	86.9	94.4	96.9	92.0	95.7	87.0	172.2	107.1	87.0	135.5	98.5	92.5	80.4	89.6	95.2	79.2	91.4
0920	Plaster & Gypsum Board	111.1	90.3	96.9	106.6	93.1	97.4	100.2	173.3	149.9	104.6	132.3	123.5	101.9	87.0	91.7	101.9	78.6	86.0
0950, 0980	Ceilings & Acoustic Treatment	99.4	90.3	93.3	92.0	93.1	92.8	82.8	173.3	143.0	81.1	132.3	115.2	94.6	87.0	89.5	94.6	78.6	83.9
0960	Flooring	92.3	104.9	96.1	92.6	105.2	96.3	92.9	185.6	120.6	92.0	145.3	107.9	93.6	94.9	94.0	90.9	95.0	92.1
0970, 0990	Wall Finishes & Painting/Coating	102.9	97.4	99.6	94.1	89.4	91.3	97.9	148.0	128.0	96.1	121.7	111.5	98.3	97.0	97.5	90.8	97.0	94.5
09	FINISHES	103.1	95.2	98.7	94.5	96.7	95.8	94.7	172.0	137.8	93.8	130.2	114.1	96.0	92.1	93.8	94.1	85.4	89.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.0	99.4	100.0	96.0	99.2	100.0	132.7	106.6	100.0	121.8	104.4	100.0	96.3	99.3	100.0	91.9	98.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	87.9	95.1	100.2	98.8	99.6	100.2	164.7	126.1	95.4	119.6	105.1	100.2	91.2	96.6	100.2	88.8	95.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.2	94.3	96.7	95.5	99.3	97.5	96.1	175.0	137.3	102.3	121.5	112.3	99.1	97.7	98.4	97.3	97.7	97.5
MF2010	WEIGHTED AVERAGE	100.3	95.6	98.3	97.8	100.2	98.8	99.7	163.9	127.6	98.0	126.2	110.3	98.5	97.0	97.9	96.7	93.2	95.1

DIVISION		NORTH CAROLINA																	
		WATERTOWN			WHITE PLAINS			YONKERS			ASHEVILLE			CHARLOTTE			DURHAM		
		136			186			107			287 - 288			281 - 282			277		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		113.5	113.5		112.8	112.8		112.8	112.8		95.6	95.6		95.6	95.6		100.8	100.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	78.1	106.1	97.8	110.6	118.8	116.4	119.1	118.8	118.9	102.4	76.6	84.3	106.0	76.7	85.4	102.6	85.3	90.4
0310	Concrete Forming & Accessories	87.5	87.4	87.4	107.1	128.5	125.6	107.4	128.5	125.7	95.4	42.1	49.4	98.6	43.7	51.2	100.0	45.1	52.7
0320	Concrete Reinforcing	95.0	94.8	94.9	95.3	183.2	139.2	99.1	183.2	141.1	94.4	63.0	78.7	100.3	58.3	79.3	94.8	57.6	76.2
0330	Cast-in-Place Concrete	99.8	91.8	96.5	93.8	128.9	108.4	105.0	128.9	114.9	110.7	51.9	86.3	115.3	50.4	88.4	104.1	47.6	80.7
03	CONCRETE	110.2	91.2	100.8	96.1	137.8	116.7	105.6	137.9	121.5	102.3	51.2	77.1	104.9	50.5	78.1	98.8	50.1	74.8
04	MASONRY	91.0	100.2	96.7	98.9	126.1	115.7	103.6	126.1	117.5	81.7	44.5	58.7	88.9	52.1	66.1	85.5	38.6	56.4
05	METALS	97.6	104.8	99.8	100.3	134.6	110.9	109.9	134.6	117.5	94.2	82.7	90.7	95.0	81.3	90.8	108.6	80.2	99.9
06	WOOD, PLASTICS & COMPOSITES	85.0	86.3	85.8	105.6	131.7	120.3												

City Cost Indexes

DIVISION		NORTH CAROLINA														
		ELIZABETH CITY			FAYETTEVILLE			GASTONIA			GREENSBORO			HICKORY		
		289			283			270			270,272 - 274			289		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		105.0	105.0		100.8	100.8		95.6	95.6		100.8	100.8		100.8	100.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	107.1	87.0	93.0	101.6	85.2	90.1	102.2	76.6	84.3	102.5	85.3	90.4	101.3	85.1	90.0
0310	Concrete Forming & Accessories	85.5	43.3	49.1	95.0	60.4	65.1	101.9	39.5	48.0	99.7	45.4	52.8	91.6	37.9	45.2
0320	Concrete Reinforcing	92.8	47.3	70.1	98.0	57.7	77.9	94.8	58.3	76.6	93.7	57.8	75.8	94.4	57.9	76.1
0330	Cast-in-Place Concrete	104.3	47.4	80.7	116.1	48.9	88.2	108.2	53.4	85.5	103.4	48.2	80.5	110.7	48.7	84.9
03	CONCRETE	98.8	47.3	73.4	104.4	57.3	81.2	100.9	49.7	75.6	98.3	50.4	74.7	102.0	47.3	75.0
04	MASONRY	97.5	48.8	67.4	84.7	39.6	56.8	85.8	51.7	64.7	82.9	42.1	57.6	72.2	44.4	55.0
05	METALS	96.1	76.9	90.2	113.2	80.4	103.1	94.9	81.2	90.7	101.9	80.4	95.3	94.3	79.9	89.9
06	WOOD, PLASTICS & COMPOSITES	82.0	44.5	60.9	95.9	66.6	79.4	105.5	37.4	67.1	99.2	45.9	69.1	90.9	36.0	59.9
07	THERMAL & MOISTURE PROTECTION	105.9	44.1	80.8	103.7	46.6	80.5	104.0	46.0	80.5	106.3	43.7	80.9	104.1	42.5	79.1
08	OPENINGS	95.0	39.3	81.8	94.8	59.1	86.4	98.4	42.0	85.1	97.8	47.8	86.0	94.8	37.6	81.2
0920	Plaster & Gypsum Board	100.1	42.0	60.6	102.8	65.4	77.3	105.1	35.3	57.6	110.5	44.0	65.3	97.5	33.9	54.2
0950, 0980	Ceilings & Acoustic Treatment	95.1	42.0	59.7	92.5	65.4	74.5	95.2	35.3	55.3	95.1	44.0	61.1	91.6	33.9	53.2
0960	Flooring	98.3	23.6	76.0	101.7	43.5	84.3	104.8	43.5	86.5	106.2	40.4	86.5	101.4	33.5	81.1
0970, 0990	Wall Finishes & Painting/Coating	103.4	42.9	67.0	107.1	33.9	63.1	107.1	41.1	67.4	103.4	32.3	60.7	107.1	41.1	67.4
09	FINISHES	97.1	39.5	65.0	97.7	55.5	74.2	99.5	39.4	66.0	100.5	42.8	68.3	96.9	36.2	63.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	72.2	94.4	100.0	76.0	95.2	100.0	77.9	95.6	100.0	77.8	95.6	100.0	77.6	95.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.3	52.2	78.0	100.3	52.8	81.3	100.4	53.5	81.6	100.2	53.3	81.4	95.5	53.3	78.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.1	35.3	63.4	95.6	51.9	72.8	96.2	58.7	76.6	93.4	57.0	74.4	94.2	58.7	75.7
MF2010	WEIGHTED AVERAGE	96.9	52.2	77.4	100.9	58.5	82.5	98.4	56.1	80.0	98.8	56.3	80.3	95.6	54.9	77.9

DIVISION		NORTH CAROLINA												NORTH DAKOTA		
		MURPHY			RALEIGH			ROCKY MOUNT			WILMINGTON			WINSTON-SALEM		
		289			275 - 276			278			271			271		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.6	95.6		100.8	100.8		100.8	100.8		95.6	95.6		100.8	100.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.6	76.5	84.5	103.7	85.3	90.8	105.0	85.3	91.2	103.6	76.8	84.8	102.8	85.3	90.5
0310	Concrete Forming & Accessories	102.6	40.2	48.7	98.7	47.6	54.6	92.1	45.2	51.6	96.8	49.9	56.3	101.6	49.0	56.2
0320	Concrete Reinforcing	93.9	46.9	70.4	100.0	57.8	78.9	92.8	57.6	75.2	95.1	57.6	76.4	93.7	57.6	75.7
0330	Cast-in-Place Concrete	114.5	45.0	85.7	109.3	52.0	85.5	102.0	48.3	79.7	110.3	50.2	85.3	105.9	50.6	83.0
03	CONCRETE	105.3	45.0	75.5	102.0	52.8	77.7	99.5	50.3	75.2	102.2	53.1	77.9	99.6	52.8	76.5
04	MASONRY	74.5	41.9	54.4	88.1	42.9	60.2	76.2	40.2	53.9	72.4	42.4	53.9	83.0	39.3	56.0
05	METALS	92.1	75.3	87.0	94.8	80.4	90.4	95.3	79.6	90.5	93.9	80.2	89.7	99.4	80.2	93.5
06	WOOD, PLASTICS & COMPOSITES	106.2	40.5	69.2	97.9	48.6	70.1	89.5	45.7	64.8	98.8	50.1	71.3	99.2	50.4	71.7
07	THERMAL & MOISTURE PROTECTION	104.0	41.6	78.6	100.6	47.9	79.2	106.3	41.6	80.1	103.8	47.9	81.1	106.3	44.3	81.2
08	OPENINGS	94.7	39.8	81.7	97.0	48.5	85.5	94.3	42.9	82.1	94.9	51.7	84.6	97.8	50.3	86.5
0920	Plaster & Gypsum Board	104.2	38.5	59.5	102.5	46.8	64.6	102.1	43.8	62.5	100.3	48.3	65.0	110.5	48.7	68.5
0950, 0980	Ceilings & Acoustic Treatment	91.6	38.5	56.3	95.9	46.8	63.2	92.4	43.8	60.1	92.5	48.3	63.1	95.1	48.7	64.2
0960	Flooring	105.2	24.5	81.1	103.4	43.5	85.4	101.8	22.2	78.0	102.3	45.3	85.2	106.2	43.5	87.4
0970, 0990	Wall Finishes & Painting/Coating	107.1	40.2	66.9	102.1	37.7	63.4	103.4	39.3	64.9	107.1	39.5	66.5	103.4	37.5	63.8
09	FINISHES	99.0	36.8	64.3	99.7	45.7	69.6	97.9	40.2	65.8	97.6	47.8	69.9	100.5	46.7	70.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	77.5	95.5	100.0	74.5	94.9	100.0	74.4	94.9	100.0	75.7	95.1	100.0	79.3	95.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.5	52.0	78.0	100.0	53.6	81.4	95.3	53.9	78.7	100.4	55.1	82.2	100.2	53.5	81.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.8	30.0	62.4	96.5	41.3	67.7	96.1	40.6	67.1	97.0	51.9	73.4	93.4	57.0	74.4
MF2010	WEIGHTED AVERAGE	96.4	49.2	75.8	98.2	55.1	79.4	96.0	53.2	77.4	97.2	56.6	79.5	98.5	57.1	80.5

DIVISION		NORTH DAKOTA														
		DEVILS LAKE			DICKINSON			FARGO			GRAND FORKS			JAMESTOWN		
		583			586			580 - 581			582			584		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.0	99.0		99.0	99.0		99.0	99.0		99.0	99.0		99.0	99.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.3	95.2	97.6	111.5	93.7	99.0	98.4	97.7	97.9	107.3	93.7	97.8	102.3	93.7	96.3
0310	Concrete Forming & Accessories	102.6	36.0	45.1	91.7	34.9	42.7	102.5	42.2	50.5	95.6	34.8	43.1	93.2	34.6	42.6
0320	Concrete Reinforcing	101.9	83.5	92.7	102.8	41.0	71.9	94.5	83.3	88.9	100.3	83.3	91.8	102.5	48.3	75.4
0330	Cast-in-Place Concrete	122.9	47.0	91.4	111.2	45.2	83.8	100.9	50.3	79.9	111.2	45.1	83.8	121.4	45.0	89.7
03	CONCRETE	110.8	50.2	80.9	110.1	41.0	76.0	104.7	54.0	79.7	107.3	48.7	78.4	109.3	42.2	76.2
04	MASONRY	111.7	64.4	82.4	113.4	59.2	79.8	97.9	57.4	72.9	106.2	63.8	80.0	123.8	33.4	67.8
05	METALS	95.1	84.6	91.9	95.1	64.1	85.5	99.0	86.0	95.0	95.1	79.3	90.2	95.1	65.1	85.8
06	WOOD, PLASTICS & COMPOSITES	88.7	32.8	57.1	76.6	32.8	51.9	86.8	36.1	58.2	80.8	32.8	53.7	78.5	32.8	52.7
07	THERMAL & MOISTURE PROTECTION	106.7	49.4	83.4	107.1	47.3	82.8	108.7	51.8	85.6	106.9	49.4	83.5	106.6	41.5	80.1
08	OPENINGS	96.6	40.8	83.4	96.5	30.9	81.0	98.8	48.2	86.8	96.6	40.8	83.4	96.6	33.0	81.5
0920	Plaster & Gypsum Board	115.2	30.9	57.9	105.2	30.9	54.7	91.5	34.3	52.6	106.7	30.9	55.1	106.3	30.9	55.0
0950, 0980	Ceilings & Acoustic Treatment	142.1	30.9	68.1	142.1	30.9	68.1	138.7	34.3	69.2	142.1	30.9	68.1	142.1	30.9	68.1
0960	Flooring	117.0	36.5	92.9	110.5	36.5	88.4	109.8	73.4	98.9	112.4	36.5	89.7	111.2	36.5	88.9
0970, 0990	Wall Finishes & Painting/Coating	94.9	23.0	51.7	94.9	23.0	51.7	91.0	72.2	79.7	94.9	28.9	55.2	94.9	23.0	51.7
09	FINISHES	117.6	32.9	70.4	115.3	32.9	69.4	112.3	48.8	76.9	115.5	33.6	69.9	114.7	32.9	69.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	33.3	86.6	100.0	33.5	86.7	100.0	84.9	97.0	100.0	33.4	86.7	100.0	82.8	96.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.5	74.6	87.1	95.5	67.1	84.1	100.1	77.6	91.1	100.4	33.9	73.8	95.5	35.8	71.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.3	36.7	66.6	109.1	74.2	90.9	104.8	67.7	85.5	103.3	54.8	78.0	99.3	36.6	66.6
MF2010	WEIGHTED AVERAGE	101.0	58.6	82.5	101.9	57.9	82.7	101.7	67.6	86.9	101.8	51.6	79.9	101.0	45.1	76.7

City Cost Indexes

DIVISION		NORTH DAKOTA						OHIO											
		WILLISTON			AKRON			ATHENS			CANTON			CHILlicoTHE			CINCINNATI		
		588			442 - 443			457			446 - 447			456			451 - 452		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.0	99.0		95.3	95.3		90.7	90.7		95.3	95.3		100.3	100.3		100.0	100.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.3	93.7	97.2	96.8	102.4	100.7	111.6	92.6	98.3	96.9	102.0	100.4	96.5	104.0	101.8	93.6	103.5	100.5
0310	Concrete Forming & Accessories	97.3	34.9	43.5	100.2	92.2	93.3	94.1	85.8	86.9	100.2	82.3	84.7	96.2	92.1	92.6	98.1	80.6	83.0
0320	Concrete Reinforcing	104.8	41.0	72.9	93.9	93.3	93.6	90.1	86.6	88.4	93.9	76.5	85.2	87.0	81.0	84.0	92.2	81.7	87.0
0330	Cast-in-Place Concrete	111.2	45.2	83.8	92.4	97.4	94.5	111.9	92.2	103.7	93.3	95.2	94.1	101.6	96.1	99.3	93.6	93.6	93.6
03	CONCRETE	107.3	41.0	74.6	92.9	93.5	93.2	106.4	87.6	97.2	93.4	85.3	89.4	100.8	91.3	96.1	95.3	85.5	90.4
04	MASONRY	100.0	59.2	74.7	92.1	94.1	93.3	82.7	89.5	87.0	92.8	84.6	87.7	90.1	96.7	94.2	89.8	85.5	87.1
05	METALS	95.2	64.2	85.7	94.8	82.2	90.9	101.6	78.6	94.5	94.8	75.1	88.7	93.7	84.9	91.0	95.9	84.6	92.4
06	WOOD, PLASTICS & COMPOSITES	82.2	32.8	54.3	99.1	91.4	94.7	83.4	86.8	85.3	99.5	80.8	88.9	96.0	90.6	92.9	98.5	78.5	87.2
07	THERMAL & MOISTURE PROTECTION	106.8	47.3	82.7	111.2	95.8	104.9	99.7	91.9	96.6	112.3	91.6	103.9	101.2	94.3	98.4	99.5	89.9	95.6
08	OPENINGS	96.7	30.9	81.1	115.2	92.5	109.8	99.9	83.6	96.1	108.5	77.2	101.1	91.9	84.0	90.0	99.9	78.9	94.9
0920	Plaster & Gypsum Board	106.7	30.9	55.1	102.0	90.8	94.4	93.9	86.1	88.6	103.1	79.9	87.3	96.6	90.5	92.5	98.3	78.1	84.6
0950, 0980	Ceilings & Acoustic Treatment	142.1	30.9	68.1	98.7	90.8	93.5	102.0	86.1	91.5	98.7	79.9	86.2	96.3	90.5	92.5	97.2	78.1	84.5
0960	Flooring	113.2	36.5	90.3	98.6	92.5	96.7	124.5	100.8	117.4	98.7	82.0	93.7	101.5	100.8	101.3	102.5	90.0	98.7
0970, 0990	Wall Finishes & Painting/Coating	94.9	32.2	57.2	97.1	103.9	101.2	104.9	93.1	97.8	97.1	82.8	88.5	102.2	89.8	94.7	102.2	84.8	91.7
09	FINISHES	115.6	34.0	70.1	100.1	93.3	96.4	102.9	90.1	95.8	100.4	81.8	90.0	100.4	93.7	96.6	100.8	82.2	90.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	33.5	86.7	100.0	95.3	99.1	100.0	53.3	90.6	100.0	93.1	98.6	100.0	93.1	98.6	100.0	91.4	98.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.5	67.1	84.1	100.0	94.3	97.7	95.2	52.4	78.0	100.0	82.5	93.0	95.6	94.0	94.9	100.0	81.3	92.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	103.7	74.2	88.3	99.3	92.8	95.9	97.8	98.9	98.3	98.5	87.8	92.9	97.3	85.4	91.1	96.1	79.7	87.6
MF2010	WEIGHTED AVERAGE	100.3	58.0	81.9	99.8	93.4	97.0	99.1	80.6	91.1	99.2	85.0	93.0	96.4	92.2	94.5	97.8	84.8	92.1

DIVISION		OHIO																	
		CLEVELAND			COLUMBUS			DAYTON			HAMILTON			LIMA			LORAIN		
		441			430 - 432			453 - 454			450			458			440		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.6	95.6		94.9	94.9		95.3	95.3		100.3	100.3		93.1	93.1		95.3	95.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.7	102.9	101.1	95.2	99.3	98.1	92.4	103.4	100.1	92.3	103.6	100.2	105.2	92.5	96.3	96.3	101.3	99.8
0310	Concrete Forming & Accessories	100.3	97.9	98.2	99.1	85.9	87.7	98.1	79.0	81.6	98.1	80.1	82.5	94.0	84.3	85.6	100.3	85.3	87.3
0320	Concrete Reinforcing	94.3	93.7	94.0	101.6	81.7	91.7	92.2	80.6	86.4	92.2	81.7	87.0	90.1	79.1	84.6	93.9	93.6	93.7
0330	Cast-in-Place Concrete	90.7	105.5	96.8	90.6	95.9	92.8	87.0	86.0	86.6	93.3	92.8	93.1	102.8	97.2	100.5	88.0	103.5	94.4
03	CONCRETE	92.2	99.0	95.5	95.8	88.3	92.1	92.2	81.5	86.9	95.1	85.0	90.1	99.3	87.6	93.5	90.8	92.6	91.7
04	MASONRY	96.6	105.1	101.9	97.9	94.8	96.0	89.3	81.7	84.6	89.6	84.0	86.1	112.9	81.7	93.6	88.8	98.5	94.8
05	METALS	96.3	85.2	92.9	95.9	80.5	91.2	95.2	77.8	89.8	95.2	85.1	92.1	101.6	80.4	95.1	95.4	83.3	91.6
06	WOOD, PLASTICS & COMPOSITES	98.2	94.8	96.2	97.5	83.7	89.7	99.7	77.3	87.1	98.5	78.5	87.2	83.3	84.0	83.7	99.1	82.0	89.4
07	THERMAL & MOISTURE PROTECTION	109.8	108.1	109.1	101.8	95.7	99.3	104.5	86.4	97.2	101.3	88.7	96.2	99.3	92.5	96.5	112.2	101.1	107.7
08	OPENINGS	104.5	94.3	102.1	103.0	80.4	97.7	99.3	78.0	94.2	96.9	78.9	92.6	99.9	78.3	94.8	108.5	87.4	103.5
0920	Plaster & Gypsum Board	101.2	94.3	96.5	97.6	83.2	87.8	98.3	76.8	83.7	98.3	78.1	84.6	93.9	83.2	86.6	102.0	81.2	87.8
0950, 0980	Ceilings & Acoustic Treatment	97.0	94.3	95.2	100.4	83.2	89.0	98.2	76.8	84.0	97.2	78.1	84.5	101.0	83.2	89.2	98.7	81.2	87.1
0960	Flooring	98.4	105.1	100.4	94.7	87.9	92.6	105.2	80.7	97.9	102.5	90.0	98.7	123.6	88.3	113.1	98.7	105.1	100.6
0970, 0990	Wall Finishes & Painting/Coating	97.1	105.2	102.0	100.9	93.3	96.3	102.2	85.2	92.0	102.2	84.8	91.7	104.9	83.8	92.2	97.1	105.2	102.0
09	FINISHES	99.7	99.6	99.6	97.5	86.6	91.4	101.7	79.5	89.3	100.7	81.9	90.2	101.9	84.7	92.3	100.2	90.4	94.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	102.1	100.4	100.0	93.8	98.8	100.0	90.9	98.2	100.0	90.9	98.2	100.0	94.1	98.8	100.0	98.3	99.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	99.8	99.9	100.0	92.3	96.9	100.8	81.7	93.1	100.5	80.5	92.5	95.2	84.7	91.0	100.0	85.2	94.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.8	106.2	102.6	97.1	88.1	92.4	94.7	82.7	88.4	95.1	81.0	87.8	98.1	78.4	87.8	98.7	86.7	92.4
MF2010	WEIGHTED AVERAGE	98.9	100.0	99.4	98.6	89.7	94.7	97.5	83.2	91.3	97.4	84.5	91.8	99.6	84.4	93.0	98.8	90.4	95.2

DIVISION		OHIO																	
		MANSFIELD			MARION			SPRINGFIELD			STEUENVILLE			TOLEDO			YOUNGSTOWN		
		448 - 449			433			455			439			434 - 436			444 - 445		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	95.3	95.3		94.5	94.5		95.3	95.3		99.3	99.3		97.3	97.3		95.3	95.3	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	92.7	102.2	99.3	91.1	97.8	95.8	92.7	102.1	99.3	134.7	107.7	115.8	94.4	99.8	98.2	96.7	103.0	101.1
0310	Concrete Forming & Accessories	90.3	83.5	84.4	95.7	81.3	83.3	98.1	83.3	85.4	97.6	87.9	89.2	99.0	92.5	93.4	100.2	85.9	87.9
0320	Concrete Reinforcing	85.4	75.6	80.5	93.7	81.5	87.6	92.2	78.9	85.6	91.1	85.9	88.5	101.6	87.2	94.4	93.9	86.1	90.0
0330	Cast-in-Place Concrete	85.6	94.5	89.3	82.8	92.9	87.0	89.4	85.9	87.9	89.9	94.7	91.9	90.6	100.2	94.6	91.5	97.1	93.9
03	CONCRETE	85.6	85.4	85.5	88.0	85.1	86.5	93.3	83.1	88.3	91.7	89.3	90.5	95.8	93.9	94.9	92.5	89.3	90.9
04	MASONRY	91.2	93.7	92.7	100.0	92.4	95.3	89.5	81.7	84.6	86.5	93.8	91.0	106.6	96.8	100.6	92.4	91.1	91.6
05	METALS	95.6	75.5	89.4	95.0	78.1	89.8	95.1	77.0	89.5	91.6	79.9	87.9	95.7	86.9	93.0	94.8	79.3	90.0
06	WOOD, PLASTICS & COMPOSITES	86.8	82.0	84.1	93.5	81.7	86.9	101.1	83.4	91.1	89.3	86.1	87.5	97.5	91.5	94.1	99.1	84.1	90.6
07	THERMAL & MOISTURE PROTECTION	111.6	93.6	104.3	101.4	82.0	93.5	104.4	87.0	97.4	113.5	96.6	106.6	103.4	100.9	102.4	112.4	92.8	104.4
08	OPENINGS	108.8	76.7	101.2	97.1	77.6	92.5	97.4	78.6	92.9	97.5	82.9	94.0	100.4	88.8	97.6	108.5	84.2	102.7
0920	Plaster & Gypsum Board	95.2	81.2	85.7	95.4	81.2	85.7	98.3	83.2	88.0	95.5	85.1	88.4	97.6	91.2	93.2	102.0	83.3	89.3
0950, 0980	Ceilings & Acoustic Treatment	99.6	81.2	87.4	100.4	81.2	87.6	98.2	83.2	88.2	97.3	85.1	89.2	100.4	91.2	94.3	98.7	83.3	88.5
0960	Flooring	94.6	104.7	97.6	93.5	71.0	86.8	105.2	80.7	97.9	122.7	99.8	115.9	93.9	101.5	96.2	98.7	92.1	96.7
0970, 0990	Wall Finishes & Painting/Coating	97.1	88.5	91.9	100.9	48.5	69.4	102.2	85.2	92.0	114.2	102.6	107.2	100.9	102.1	101.6	97.1	92.6	94.4
09	FINISHES	98.0	87.7	92.3	96.4	76.1	85.1	101.7	83.1	91.4	114.3	91.2	101.4	97.2	94.8	95.9	100.3	87.3	93.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.2	98.6	100.0	54.9	91.0	100.0	91.6	98.3	100.0	95.2	99.0	100.0	96.3	99.3	100.0	94.0	98.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.1	83.4	90.4	95.2	89.7	93.0	100.8	81.7	93.1	95.5	91.9	94.0	100.1	99.2	99.7	100.0	88.4	95.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.2	77.7	86.5	91.2	77.7	84.1	94.7	85.6	90.0	86.4	112.7	100.1	97.2	101.6	99.5	98.7	82.9	90.5
MF2010	WEIGHTED AVERAGE	96.6	85.6	91.8	95.0	83.7	90.1	97.5	84.2	91.7	96.8	94.5	95.8	98.7	96.4	97.7	99.1	88.3	94.4

City Cost Indexes

DIVISION		OHIO			OKLAHOMA														
		ZANESVILLE			ARDMORE			CLINTON			DURANT			ENID			GUYMON		
		437 - 438			734			736			747			737			739		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.5	94.5		82.5	82.5		81.6	81.6		81.6	81.6		81.6	81.6		81.6	81.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	93.9	99.5	97.9	94.7	91.4	92.4	96.1	90.0	91.8	92.5	89.7	90.6	97.6	90.0	92.2	99.9	89.7	92.7
0310	Concrete Forming & Accessories	92.8	82.6	84.0	94.4	41.3	48.6	92.9	47.7	53.9	85.7	45.1	50.6	96.6	34.8	43.3	100.3	45.9	53.3
0320	Concrete Reinforcing	93.1	85.3	89.2	87.6	80.2	83.9	88.1	80.2	84.2	92.3	80.6	86.4	87.5	80.2	83.9	88.1	80.2	84.1
0330	Cast-in-Place Concrete	87.2	93.3	89.8	99.3	44.2	76.4	95.9	45.9	75.2	92.1	43.5	71.9	95.9	47.2	75.7	96.0	43.9	74.3
03	CONCRETE	91.5	86.5	89.0	97.5	50.0	74.1	97.1	53.5	75.6	92.9	51.5	72.5	97.7	48.2	73.3	100.7	51.9	76.7
04	MASONRY	96.8	83.4	88.5	93.4	58.1	71.5	118.8	58.1	81.2	92.4	63.4	74.5	100.6	58.1	74.3	95.9	54.6	70.3
05	METALS	96.4	80.3	91.4	93.3	70.6	86.3	93.4	70.6	86.4	91.4	71.3	85.2	94.8	70.5	87.3	93.9	70.3	86.6
06	WOOD, PLASTICS & COMPOSITES	89.6	81.7	85.2	100.7	38.7	65.7	99.7	47.3	70.1	89.5	44.0	63.8	103.6	30.0	62.0	107.5	47.0	73.4
07	THERMAL & MOISTURE PROTECTION	101.5	91.1	97.3	106.1	61.0	87.8	106.1	62.0	88.2	99.9	62.3	84.6	106.2	60.3	87.6	106.5	58.4	87.0
08	OPENINGS	97.1	80.2	93.1	93.9	49.6	83.4	93.9	54.0	84.4	93.9	52.7	84.1	93.9	44.4	82.1	94.0	49.8	83.5
0920	Plaster & Gypsum Board	92.8	81.2	84.9	84.3	37.5	52.4	84.0	46.3	58.3	79.1	42.9	54.5	85.1	28.4	46.5	85.7	46.0	58.7
0950, 0980	Ceilings & Acoustic Treatment	100.4	81.2	87.6	86.2	37.5	53.8	86.2	46.3	59.7	85.4	42.9	57.1	86.2	28.4	47.8	88.9	46.0	60.4
0960	Flooring	92.0	86.9	90.5	110.5	43.9	90.6	109.4	41.9	89.2	106.9	63.1	93.8	111.2	41.9	90.5	112.9	24.8	86.5
0970, 0990	Wall Finishes & Painting/Coating	100.9	76.0	85.9	96.5	52.4	70.0	96.5	52.4	70.0	100.1	52.4	71.4	96.5	52.4	70.0	96.5	33.8	58.8
09	FINISHES	95.9	82.2	88.3	93.8	41.0	64.4	93.6	45.8	67.0	91.8	47.7	67.2	94.3	35.4	61.5	95.8	39.7	64.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	90.0	98.0	100.0	78.0	95.6	100.0	79.0	95.8	100.0	78.3	95.7	100.0	77.1	95.4	100.0	77.8	95.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	89.7	93.0	95.4	66.3	83.7	95.4	66.3	83.7	95.4	65.8	83.5	100.3	66.3	86.6	95.4	64.2	82.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	91.5	78.2	84.6	89.7	70.4	79.6	90.7	70.4	80.1	94.7	70.4	82.0	90.7	70.4	80.1	92.3	63.0	77.0
MF2010	WEIGHTED AVERAGE	95.5	85.6	91.2	95.2	62.3	80.9	96.5	63.6	82.2	94.3	64.0	81.1	97.2	60.9	81.4	96.3	60.5	80.7

DIVISION		OKLAHOMA												OREGON					
		LAWTON			MCALESTER			MIAMI			MUSKOGEE			OKLAHOMA CITY			PONCA CITY		
		735			745			743			748			730 - 731			746		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		82.5	82.5		81.6	81.6		89.7	89.7		89.7	89.7		82.7	82.7		81.6	81.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	94.3	91.4	92.2	86.3	89.9	88.9	87.8	87.2	87.4	88.0	87.0	87.3	93.7	91.8	92.3	93.0	89.9	90.8
0310	Concrete Forming & Accessories	100.2	45.3	52.8	83.6	44.6	49.9	96.8	67.7	71.7	101.3	34.1	43.3	98.2	55.5	61.3	92.2	47.3	53.4
0320	Concrete Reinforcing	87.7	80.2	84.0	91.9	80.2	86.1	90.5	80.3	85.4	91.3	79.7	85.5	92.8	80.2	86.5	91.3	80.3	85.8
0330	Cast-in-Place Concrete	92.8	47.3	73.9	80.8	46.0	66.3	84.6	48.3	69.6	85.7	46.6	69.4	94.5	47.7	75.1	94.6	45.5	74.2
03	CONCRETE	93.8	52.9	73.6	83.4	52.1	68.0	88.2	64.0	76.2	90.0	48.3	69.4	97.3	57.5	77.7	95.0	53.1	74.3
04	MASONRY	95.9	58.1	72.5	110.7	57.1	77.5	95.2	57.2	71.7	113.0	46.0	71.5	98.7	57.4	73.1	87.8	57.1	68.8
05	METALS	98.5	70.6	89.9	91.3	70.5	84.9	91.3	82.8	88.6	92.7	81.0	89.1	92.0	70.7	85.4	91.3	70.8	84.9
06	WOOD, PLASTICS & COMPOSITES	106.4	44.1	71.3	86.9	44.0	62.7	102.4	74.6	86.7	107.0	31.4	64.3	100.3	58.2	76.5	97.6	47.0	69.1
07	THERMAL & MOISTURE PROTECTION	106.1	61.7	88.1	99.6	61.0	83.9	99.9	64.9	85.7	100.0	49.5	79.5	98.8	62.8	84.2	100.1	66.7	86.5
08	OPENINGS	95.4	52.1	85.1	93.9	52.5	84.1	93.9	69.3	88.1	93.9	42.8	81.8	94.8	59.7	86.5	93.9	53.8	84.4
0920	Plaster & Gypsum Board	87.1	43.0	57.1	77.9	42.9	54.1	85.0	74.3	77.7	87.2	29.7	48.1	92.9	57.5	68.8	83.5	46.0	58.0
0950, 0980	Ceilings & Acoustic Treatment	94.2	43.0	60.1	85.4	42.9	57.1	85.4	74.3	78.0	94.3	29.7	51.3	97.5	57.5	70.9	85.4	46.0	59.2
0960	Flooring	113.1	41.9	91.8	105.8	41.9	86.7	112.8	63.1	97.9	115.3	40.5	92.9	109.5	41.9	89.3	109.9	41.9	89.6
0970, 0990	Wall Finishes & Painting/Coating	96.5	52.4	70.0	100.1	38.6	63.1	100.1	79.1	87.5	100.1	34.9	60.9	97.9	52.4	70.6	100.1	52.4	71.4
09	FINISHES	96.4	43.8	67.1	90.8	42.0	63.6	93.7	68.8	79.8	96.7	33.7	61.6	98.6	52.0	72.6	93.4	45.3	66.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	78.6	95.7	100.0	78.3	95.6	100.0	82.1	96.4	100.0	76.5	95.3	100.0	80.0	96.0	100.0	78.6	95.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.3	66.3	86.7	95.4	61.5	81.8	95.4	61.8	81.9	100.3	60.5	84.3	100.0	66.0	86.4	95.4	61.7	81.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.3	70.4	80.9	93.1	66.1	79.0	94.6	66.1	79.7	92.7	53.7	72.3	97.3	70.4	83.3	92.7	70.0	80.8
MF2010	WEIGHTED AVERAGE	97.5	63.3	82.6	93.7	61.1	79.5	94.0	68.3	82.8	96.6	56.3	79.0	97.3	65.4	83.4	94.3	62.5	80.5

DIVISION		OKLAHOMA												OREGON					
		POTEAU			SHAWNEE			TULSA			WOODWARD			BEND			EUGENE		
		748			748			740 - 741			734			977			974		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.0	89.0		81.6	81.6		89.7	89.7		81.6	81.6		97.9	97.9		97.9	97.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	74.3	85.9	82.4	96.0	89.9	91.7	94.2	87.4	89.4	96.3	90.0	91.9	106.8	102.8	103.9	96.9	102.7	101.0
0310	Concrete Forming & Accessories	90.0	41.9	48.5	85.5	44.7	50.3	101.4	41.1	49.4	93.1	47.8	54.0	111.2	100.6	102.0	107.6	100.4	101.4
0320	Concrete Reinforcing	92.4	80.3	86.3	91.3	80.2	85.8	91.6	80.2	85.9	87.5	80.3	83.9	95.7	101.5	98.6	99.7	101.5	100.6
0330	Cast-in-Place Concrete	84.6	45.7	68.5	97.6	43.7	75.2	93.3	47.0	74.1	95.9	46.1	75.2	94.2	104.1	98.3	91.2	104.0	96.5
03	CONCRETE	90.6	51.6	71.3	96.6	51.4	74.3	95.3	51.7	73.8	97.4	53.6	75.8	104.8	101.6	103.2	96.3	101.5	98.9
04	MASONRY	95.5	57.2	71.8	111.9	57.1	78.0	96.1	61.0	74.4	89.5	58.1	70.1	98.7	104.5	102.3	96.0	104.5	101.3
05	METALS	91.3	82.4	88.5	91.2	70.4	84.8	95.9	82.0	91.6	93.5	71.0	86.5	90.7	96.6	92.5	91.4	96.4	93.0
06	WOOD, PLASTICS & COMPOSITES	94.3	40.0	63.7	89.3	44.0	63.7	106.2	37.5	67.4	99.8	47.0	70.0	103.3	100.3	101.6	98.8	100.3	99.6
07	THERMAL & MOISTURE PROTECTION	100.0	61.0	84.2	100.0	60.3	83.9	100.0	62.6	84.8	106.2	67.1	90						

City Cost Indexes

DIVISION		OREGON														
		KLAMATH FALLS			MEDFORD			PENDLETON			PORTLAND			SALEM		
		976			976			978			970 - 972			973		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.9	97.9		97.9	97.9		95.4	95.4		97.9	97.9		97.9	97.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	110.8	102.7	105.1	104.5	102.7	103.3	103.2	96.4	98.4	99.4	102.8	101.7	92.9	102.8	99.8
0310	Concrete Forming & Accessories	104.1	100.3	100.9	103.2	100.3	100.7	104.4	100.7	101.2	108.8	100.6	101.7	107.1	100.6	101.5
0320	Concrete Reinforcing	95.7	101.5	98.6	97.3	101.5	99.4	95.1	101.5	98.3	100.5	101.5	101.0	106.1	101.5	103.8
0330	Cast-in-Place Concrete	94.2	104.0	98.3	94.2	104.0	98.3	95.0	105.4	99.3	93.7	104.1	98.0	88.4	104.1	94.9
03	CONCRETE	107.6	101.5	104.6	102.2	101.5	101.8	88.4	102.1	95.2	97.7	101.6	99.7	96.0	101.6	98.8
04	MASONRY	110.8	104.5	106.9	93.1	104.5	100.2	101.7	104.6	103.5	96.5	104.5	101.5	103.3	104.5	104.1
05	METALS	90.7	96.3	92.5	91.0	96.3	92.6	97.1	97.1	97.1	92.4	96.6	93.7	97.8	96.6	97.4
06	WOOD, PLASTICS & COMPOSITES	93.8	100.3	97.5	92.6	100.3	97.0	95.9	100.4	98.4	99.8	100.3	100.1	96.7	100.3	98.7
07	THERMAL & MOISTURE PROTECTION	104.7	94.8	100.7	104.4	94.8	100.5	97.4	95.4	96.6	103.8	98.1	101.5	101.7	96.3	99.5
08	OPENINGS	93.9	103.8	96.2	96.3	103.8	98.1	89.5	103.9	92.9	92.2	103.8	95.0	95.9	103.8	97.8
0920	Plaster & Gypsum Board	98.2	100.2	99.6	97.5	100.2	99.3	85.2	100.2	95.4	100.9	100.2	100.4	97.3	100.2	99.3
0950, 0980	Ceilings & Acoustic Treatment	100.3	100.2	100.2	107.3	100.2	102.6	64.6	100.2	88.3	95.3	100.2	98.5	100.7	100.2	100.4
0960	Flooring	105.0	105.3	105.1	104.4	105.3	104.7	72.5	105.3	82.3	103.6	105.3	104.1	104.3	105.3	104.6
0970, 0990	Wall Finishes & Painting/Coating	104.6	59.4	77.4	104.6	59.4	77.4	96.1	66.9	78.5	104.3	66.9	81.8	102.8	72.3	84.5
09	FINISHES	104.0	96.7	99.9	104.4	96.7	100.1	71.8	97.6	86.2	101.4	97.5	99.2	100.5	98.1	99.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	101.8	100.4	100.0	101.8	100.4	100.0	92.2	98.4	100.0	101.9	100.4	100.0	101.9	100.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.1	102.6	98.1	100.0	102.6	101.0	96.9	115.3	104.3	100.0	102.6	101.0	100.0	102.6	101.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.6	81.3	87.6	97.9	81.3	89.2	87.3	96.5	92.1	94.7	103.2	99.1	102.1	96.3	99.1
MF2010	WEIGHTED AVERAGE	98.2	98.2	98.2	98.4	98.2	98.3	93.1	102.5	97.2	97.2	101.4	99.1	99.0	100.5	99.7

DIVISION		PENNSYLVANIA														
		ALLETOWN			ALTOONA			BEDFORD			BRADFORD			BUTLER		
		181			166			155			167			160		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		113.5	113.5		113.5	113.5		110.5	110.5		113.5	113.5		113.5	113.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.7	105.4	101.0	94.2	105.5	102.1	103.7	102.2	102.7	89.5	104.8	100.3	85.7	106.9	100.6
0310	Concrete Forming & Accessories	100.5	114.2	112.3	85.7	80.4	81.1	85.2	82.7	83.0	87.9	82.5	83.2	87.2	95.7	94.5
0320	Concrete Reinforcing	94.4	111.5	103.0	91.5	106.0	98.7	89.7	83.5	86.6	93.5	106.4	99.9	92.2	112.5	102.3
0330	Cast-in-Place Concrete	85.0	101.5	91.8	94.7	87.5	91.7	109.6	71.2	93.6	90.4	92.9	91.5	83.7	98.1	89.6
03	CONCRETE	94.3	110.0	102.1	89.5	89.1	89.3	103.4	80.2	91.9	96.0	92.0	94.0	81.7	100.8	91.1
04	MASONRY	94.2	102.2	99.2	96.9	65.6	77.5	114.6	88.5	98.5	94.0	88.5	90.6	98.9	98.5	98.7
05	METALS	99.9	123.1	107.0	93.7	118.3	101.3	97.5	105.6	100.0	97.8	118.2	104.1	93.4	123.4	102.7
06	WOOD, PLASTICS & COMPOSITES	103.0	117.3	111.1	81.2	82.7	82.0	83.7	82.6	83.1	87.6	80.3	83.5	82.6	94.8	89.5
07	THERMAL & MOISTURE PROTECTION	102.5	120.4	109.7	101.8	92.0	97.8	104.0	88.6	97.8	102.4	92.3	98.3	101.5	100.5	101.1
08	OPENINGS	92.5	116.3	98.1	86.4	90.1	87.3	92.1	83.6	90.1	92.6	92.3	92.5	86.4	105.7	91.0
0920	Plaster & Gypsum Board	99.7	117.6	111.8	91.1	81.9	84.8	91.6	81.9	85.0	91.9	79.4	83.4	91.1	94.4	93.3
0950, 0980	Ceilings & Acoustic Treatment	85.7	117.6	106.9	90.1	81.9	84.6	95.7	81.9	86.5	88.4	79.4	82.4	91.1	94.4	93.3
0960	Flooring	93.6	97.6	94.8	87.4	99.3	91.0	96.9	89.8	94.7	88.5	105.8	93.6	88.2	82.5	86.5
0970, 0990	Wall Finishes & Painting/Coating	98.3	72.1	82.5	94.6	108.9	103.2	104.7	83.3	91.9	98.3	92.6	94.9	94.6	108.9	103.2
09	FINISHES	93.8	107.1	101.2	92.2	85.9	88.7	98.3	82.6	89.6	91.9	85.7	88.5	92.1	93.5	92.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	104.5	100.9	100.0	95.3	99.1	100.0	98.6	99.7	100.0	99.3	99.9	100.0	102.3	100.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	110.6	104.4	99.8	84.3	93.6	95.0	89.1	92.7	95.4	90.9	93.6	95.0	93.9	94.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.2	98.9	98.6	88.3	111.1	100.2	93.7	111.1	102.8	91.7	111.1	101.8	88.9	110.1	100.0
MF2010	WEIGHTED AVERAGE	97.6	108.8	102.4	94.3	92.7	93.6	98.0	92.6	95.7	95.3	96.8	96.0	92.1	102.2	96.5

DIVISION		PENNSYLVANIA														
		DOYLESTOWN			DUBOIS			ERIE			GREENSBURG			HARRISBURG		
		189			158			164 - 165			156			170 - 171		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.6	94.6		110.5	110.5		110.5	110.5		110.5	110.5		112.7	112.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.5	91.4	95.1	108.7	102.5	104.4	91.1	105.9	101.5	99.8	104.7	103.2	85.2	104.5	98.7
0310	Concrete Forming & Accessories	84.7	129.1	123.0	84.7	83.9	84.0	99.9	88.3	89.9	91.5	95.6	95.1	99.8	89.4	90.8
0320	Concrete Reinforcing	91.3	135.0	113.1	89.1	106.7	97.9	93.5	106.5	100.0	89.1	112.5	100.8	98.1	106.7	102.4
0330	Cast-in-Place Concrete	80.3	87.6	83.4	105.7	93.5	100.6	93.1	82.6	88.7	101.7	97.5	100.0	97.1	96.8	97.0
03	CONCRETE	90.0	115.6	102.6	104.8	92.8	98.9	88.6	90.9	89.7	98.4	100.5	99.4	99.2	96.5	97.9
04	MASONRY	97.2	127.9	116.2	114.6	89.6	99.2	86.7	92.8	90.5	125.3	98.5	108.7	95.0	90.6	92.3
05	METALS	97.4	125.6	106.1	97.5	117.6	103.7	93.9	117.0	101.0	97.5	121.9	105.0	106.1	120.3	110.5
06	WOOD, PLASTICS & COMPOSITES	83.1	131.5	110.4	82.6	82.4	82.5	99.2	86.7	92.1	90.5	94.7	92.9	100.1	88.7	93.7
07	THERMAL & MOISTURE PROTECTION	100.6	132.8	113.7	104.3	95.5	100.7	102.3	93.4	98.7	103.9	100.1	102.4	106.2	112.2	108.6
08	OPENINGS	94.7	140.0	105.4	92.1	93.5	92.4	86.6	93.0	88.1	92.1	105.7	95.3	95.8	95.4	95.7
0920	Plaster & Gypsum Board	89.6	132.2	118.6	90.5	81.7	84.5	99.7	86.0	90.4	92.9	94.4	93.9	103.4	88.1	93.0
0950, 0980	Ceilings & Acoustic Treatment	84.9	132.2	116.4	95.7	81.7	86.4	85.7	86.0	85.9	94.8	94.4	94.5	99.4	88.1	91.9
0960	Flooring	78.6	136.8	96.0	96.7	105.8	99.4	92.3	93.5	92.7	99.8	69.3	90.7	98.7	93.4	97.1
0970, 0990	Wall Finishes & Painting/Coating	97.8	70.5	81.4	104.7	108.9	107.2	103.3	92.6	96.9	104.7	108.9	107.2	102.3	91.5	95.8
09	FINISHES	85.1	123.5	106.5	98.6	89.3	93.4	94.3	89.2	91.5	98.7	91.9	94.9	98.8	89.9	93.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	71.9	94.4	100.0	98.6	99.7	100.0	100.9	100.2	100.0	102.1	100.4	100.0	96.4	99.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.0	125.4	107.2	95.0	89.5	92.8	99.8	93.1	97.1	95.0	92.8	94.1	100.0	90.7	96.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	91.1	126.9	109.8	94.3	111.1	103.1	90.1	87.4	88.7	94.3	111.1	103.1	96.8	88.4	92.4
MF2010	WEIGHTED AVERAGE	94.6	120.8	106.0	98.4	97.1	97.8	94.1	95.0	94.5	98.0	101.6	99.5	99.6	95.9	98.0

City Cost Indexes

DIVISION		PENNSYLVANIA																	
		INDIANA			JOHNSTOWN			KITANNING			LANCASTER			LEHIGH VALLEY			MONTROSE		
		157			168			162			175 - 176			188			188		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		110.5	110.5		110.5	110.5		113.5	113.5		112.7	112.7		113.5	113.5		113.5	113.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.9	103.3	101.7	104.2	103.9	104.0	88.2	106.8	101.3	77.7	104.4	96.5	87.9	105.1	99.9	86.6	103.4	98.4
0310	Concrete Forming & Accessories	85.8	86.3	86.2	84.7	84.2	84.3	87.2	95.8	94.6	91.6	88.9	89.3	94.2	113.6	110.9	83.3	88.5	87.8
0320	Concrete Reinforcing	88.4	112.6	100.5	89.7	112.2	100.9	92.2	112.6	102.4	88.4	106.6	97.5	91.7	111.4	101.5	96.0	108.4	102.2
0330	Cast-in-Place Concrete	99.7	97.3	98.7	110.6	92.9	103.2	86.9	98.0	91.5	80.8	97.7	87.8	86.9	100.9	92.7	85.2	90.9	87.6
03	CONCRETE	95.9	96.3	96.1	104.2	93.7	99.0	84.1	100.8	92.4	90.9	96.5	93.7	93.3	109.4	101.2	92.0	94.1	93.1
04	MASONRY	110.3	100.2	104.1	111.1	88.0	96.8	101.7	100.2	100.8	99.9	90.8	94.3	94.2	101.7	98.8	94.1	96.0	95.3
05	METALS	97.6	121.5	105.0	97.5	120.1	104.5	93.5	123.4	102.7	99.5	119.7	105.7	99.5	121.7	106.4	97.9	115.3	103.2
06	WOOD, PLASTICS & COMPOSITES	84.5	82.4	83.3	82.6	82.6	82.6	82.6	94.8	89.5	95.2	88.7	91.5	94.4	117.3	107.3	82.4	88.3	85.8
07	THERMAL & MOISTURE PROTECTION	103.8	97.9	101.4	104.0	93.7	99.8	101.6	100.9	101.3	102.4	98.5	100.8	102.3	103.6	102.8	102.0	92.4	98.1
08	OPENINGS	92.1	95.2	92.8	92.1	91.8	92.0	86.4	102.0	90.1	89.7	99.3	92.0	93.0	116.3	98.5	89.8	93.8	90.8
0920	Plaster & Gypsum Board	92.0	81.7	85.0	90.3	81.9	84.6	91.1	94.4	93.3	101.3	88.1	92.3	93.0	117.6	109.7	90.4	87.7	88.6
0950, 0980	Ceilings & Acoustic Treatment	95.7	81.7	86.4	94.8	81.9	86.2	91.1	94.4	93.3	90.3	88.1	88.8	86.7	117.6	107.2	88.4	87.7	88.0
0960	Flooring	97.4	105.8	99.9	96.7	100.0	97.7	88.2	105.8	93.5	94.5	93.4	94.2	90.9	97.6	92.9	86.7	58.9	78.4
0970, 0990	Wall Finishes & Painting/Coating	104.7	108.9	107.2	104.7	108.9	107.2	94.6	108.9	103.2	101.9	58.4	75.7	98.3	67.9	80.0	98.3	105.6	102.7
09	FINISHES	98.0	90.2	93.7	97.9	88.7	92.8	92.3	97.5	95.2	93.9	86.2	89.6	92.2	105.5	99.6	91.0	84.8	87.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	100.7	100.1	100.0	98.8	99.8	100.0	102.3	100.5	100.0	96.3	99.3	100.0	104.1	100.8	100.0	99.1	99.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.0	92.7	94.1	95.0	89.8	92.9	95.0	96.1	95.4	95.4	90.8	93.5	95.4	110.3	101.4	95.4	98.0	96.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.3	111.1	103.1	94.3	111.1	103.1	88.3	111.1	100.2	90.9	45.1	67.0	92.6	133.5	113.9	91.7	97.2	94.5
MF2010	WEIGHTED AVERAGE	96.9	100.1	98.3	97.9	97.3	97.7	92.5	103.4	97.3	94.8	89.3	92.4	95.4	112.5	102.9	94.4	97.1	95.6

DIVISION		PENNSYLVANIA																	
		NEW CASTLE			NORRISTOWN			OIL CITY			PHILADELPHIA			PITTSBURGH			POTTSVILLE		
		161			194			183			190 - 191			150 - 152			179		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		113.5	113.5		98.0	98.0		113.5	113.5		97.5	97.5		111.8	111.8		112.7	112.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	86.1	106.9	100.7	92.4	99.8	97.6	84.7	105.0	99.0	99.9	99.2	99.4	103.4	106.7	105.7	80.4	104.6	97.4
0310	Concrete Forming & Accessories	87.2	97.4	96.0	83.5	130.8	124.3	87.2	83.5	84.0	98.7	139.9	134.3	99.0	98.7	98.7	83.2	90.0	89.1
0320	Concrete Reinforcing	91.0	93.3	92.2	92.5	142.2	117.3	92.2	93.1	92.6	100.5	142.2	121.3	90.1	112.9	101.5	87.7	103.8	95.7
0330	Cast-in-Place Concrete	84.4	96.9	89.6	79.7	127.5	99.6	82.0	96.5	88.1	94.8	131.7	110.1	105.7	97.7	102.4	86.0	97.9	91.0
03	CONCRETE	82.0	97.6	89.7	86.9	131.4	108.9	80.5	91.2	85.7	98.2	136.9	117.3	101.7	102.0	101.9	94.6	96.6	95.6
04	MASONRY	98.1	98.5	98.4	106.5	125.7	118.4	98.2	95.2	96.3	95.5	130.2	117.0	103.3	103.3	103.3	94.5	92.9	93.5
05	METALS	93.5	114.0	99.8	99.4	130.9	109.1	93.5	112.1	99.2	100.7	131.2	110.1	98.9	122.9	106.3	99.7	118.9	105.6
06	WOOD, PLASTICS & COMPOSITES	82.6	98.1	91.4	81.5	131.4	109.7	82.6	80.3	81.3	97.2	141.5	122.2	100.5	98.0	99.1	84.9	88.6	87.0
07	THERMAL & MOISTURE PROTECTION	101.5	97.0	99.7	103.9	132.6	115.6	101.4	94.9	98.8	102.7	135.7	116.1	104.1	102.0	103.3	102.5	107.1	104.3
08	OPENINGS	86.4	98.0	89.2	88.6	142.0	101.2	86.4	80.7	85.1	94.4	147.5	106.9	95.5	107.5	98.3	89.8	92.5	90.4
0920	Plaster & Gypsum Board	91.1	97.8	95.7	88.2	132.2	118.1	91.1	79.4	83.2	97.2	142.6	128.1	99.8	97.8	98.5	95.7	88.0	90.5
0950, 0980	Ceilings & Acoustic Treatment	91.1	97.8	95.6	90.5	132.2	118.3	91.1	79.4	83.3	91.6	142.6	125.6	95.7	97.8	97.1	90.3	88.0	88.8
0960	Flooring	88.2	58.5	79.4	91.6	139.5	105.9	88.2	105.8	93.5	98.5	139.5	110.7	102.8	108.0	104.3	91.1	93.4	91.8
0970, 0990	Wall Finishes & Painting/Coating	94.6	108.9	103.2	100.8	147.4	128.8	94.6	108.9	103.2	105.9	154.0	134.8	104.7	121.2	114.6	101.9	105.6	104.1
09	FINISHES	92.1	91.2	91.6	92.9	133.9	115.7	92.0	88.3	89.9	98.2	141.6	122.4	100.9	102.1	101.6	92.4	91.9	92.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	102.6	100.5	100.0	111.7	102.3	100.0	100.4	100.1	100.0	120.5	104.1	100.0	102.5	100.5	100.0	96.7	99.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.0	93.5	94.4	95.2	125.8	107.4	95.0	92.6	94.0	100.0	130.5	112.2	99.9	101.2	100.4	95.4	98.2	96.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	88.9	88.7	88.8	92.0	148.7	121.6	90.8	110.1	100.9	98.6	148.7	124.7	96.7	111.1	104.2	89.0	91.1	90.1
MF2010	WEIGHTED AVERAGE	92.1	97.2	94.4	94.9	129.5	110.0	92.1	97.0	94.3	98.9	133.4	113.9	99.7	105.8	102.3	94.7	98.0	96.1

DIVISION		PENNSYLVANIA																	
		READING			SCRANTON			STATE COLLEGE			STROUDSBURG			SUNBURY			UNIONTOWN		
		195 - 196			184 - 185			168			183			178			154		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		117.0	117.0		113.5	113.5		112.7	112.7		113.5	113.5		113.5	113.5		110.5	110.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.9	111.5	107.1	91.1	105.9	101.5	81.6	104.2	97.5	85.6	103.5	98.2	90.9	105.6	101.2	98.5	104.7	102.8
0310	Concrete Forming & Accessories	99.0	90.5	91.7	100.7	90.1	91.5	85.4	80.1	80.9	88.7	89.5	89.4	95.8	88.9	89.9	79.0	95.7	93.4
0320	Concrete Reinforcing	93.8	103.9	98.8	94.4	108.7	101.6	92.7	106.7	99.7	94.7	115.2	104.9	90.1	106.7	98.4	89.1	112.5	100.8
0330	Cast-in-Place Concrete	71.5	98.2	82.6	88.7	92.9	90.5	85.6	66.6	77.7	83.6	73.4	79.4	94.0	96.5	95.0	99.7	97.5	98.8
03	CONCRETE	86.2	96.9	91.5	96.1	95.8	96.0	96.3	81.9	89.2	90.8	89.8	90.3	98.2	96.2	97.2	95.5	100.6	98.0
04	MASONRY	96.3	94.0	94.9	94.6	96.5	95.8	99.5	79.2	87.0	91.8	101.3	97.7	93.9	90.4	91.7	127.7	98.5	109.6
05	METALS	99.7	119.2	105.7	101.9	121.2	107.9	97.6	119.0	104.2	99.6	117.8	105.2	99.4	120.0	105.8	97.3	122.0	104.9
06	WOOD, PLASTICS & COMPOSITES	100.3	88.5	93.7	103.0	88.2	94.7	89.7	82.7	85.7									

City Cost Indexes

DIVISION		PENNSYLVANIA											
		WASHINGTON			WELLSBORO			WESTCHESTER			WILKES-BARRE		
		153			153			193			186 - 187		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	110.5	110.5		113.5	113.5		98.0	98.0		113.5	113.5	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.6	104.7	102.9	93.1	103.3	100.3	98.0	97.2	97.4	83.7	105.7	99.2
0310	Concrete Forming & Accessories	85.9	95.8	94.5	87.3	87.1	87.1	90.1	129.3	123.9	91.3	90.4	90.5
0320	Concrete Reinforcing	89.1	112.6	100.9	92.7	108.3	100.5	91.7	109.7	100.7	93.5	110.5	102.0
0330	Cast-in-Place Concrete	99.7	97.6	98.8	89.7	88.8	89.3	88.2	126.7	104.2	80.3	92.6	85.4
03	CONCRETE	96.0	100.6	98.3	98.5	92.8	95.7	94.3	124.4	109.1	87.9	96.2	92.0
04	MASONRY	109.8	100.2	103.9	100.2	90.4	94.2	101.2	125.7	116.3	106.6	96.1	100.1
05	METALS	97.2	122.3	105.0	97.7	115.4	103.1	99.4	114.9	104.2	97.8	121.8	105.2
06	WOOD, PLASTICS & COMPOSITES	84.6	94.7	90.3	87.1	88.6	87.9	88.8	131.4	112.8	91.0	88.6	89.7
07	THERMAL & MOISTURE PROTECTION	103.8	100.6	102.5	102.6	90.3	97.6	104.3	131.7	115.4	102.0	107.4	104.2
08	OPENINGS	92.0	105.7	95.3	92.5	94.0	92.9	88.6	125.7	97.4	89.8	100.4	92.3
0920	Plaster & Gypsum Board	91.8	94.4	93.5	91.3	88.0	89.1	90.0	132.2	118.7	92.3	88.0	89.4
0950, 0980	Ceilings & Acoustic Treatment	94.8	94.4	94.5	85.8	88.0	87.3	90.5	132.2	118.3	88.4	88.0	88.2
0960	Flooring	97.5	105.8	100.0	88.2	51.7	77.3	94.4	139.5	107.9	89.8	96.3	91.7
0970, 0990	Wall Finishes & Painting/Coating	104.7	106.8	106.0	98.3	105.6	102.7	100.8	147.4	128.8	98.3	105.6	102.7
09	FINISHES	97.8	97.3	97.6	91.6	82.6	86.6	94.4	131.9	115.3	91.9	92.3	92.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	102.1	100.4	100.0	95.8	99.2	100.0	115.5	103.1	100.0	99.0	99.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.0	96.0	95.4	95.4	89.6	93.0	95.2	125.5	107.3	95.4	98.7	96.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.7	111.1	102.8	91.7	83.3	87.3	91.9	117.6	105.3	92.6	91.5	92.0
MF2010	WEIGHTED AVERAGE	96.7	103.2	99.5	95.9	92.3	94.3	95.8	121.7	107.1	94.7	99.2	96.7

DIVISION		PUERTO RICO			RHODE ISLAND			SOUTH CAROLINA					
		SAN JUAN			NEWPORT			PROVIDENCE		AIKEN		BEAUFORT	
		009			028			029		298		299	
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	90.2	90.2		102.1	102.1		102.1	102.1	100.5	100.5	100.5	100.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	132.3	90.5	103.0	90.6	104.2	100.2	92.0	104.2	100.6	118.8	87.1	96.5
0310	Concrete Forming & Accessories	93.7	18.1	28.4	102.6	120.6	118.1	103.9	120.6	118.3	98.6	68.9	73.0
0320	Concrete Reinforcing	191.6	13.1	102.5	106.8	153.9	130.3	103.4	153.9	128.6	94.8	67.3	81.0
0330	Cast-in-Place Concrete	103.7	31.2	73.6	80.3	124.1	98.5	96.9	124.1	108.2	80.9	70.8	76.7
03	CONCRETE	110.5	22.7	67.2	96.1	127.4	111.6	103.6	127.4	115.3	101.3	70.4	86.0
04	MASONRY	83.6	17.2	42.5	96.4	128.9	116.5	100.6	128.9	118.1	73.9	62.5	66.8
05	METALS	117.2	34.9	91.8	99.4	126.8	107.8	106.5	126.8	112.8	92.9	85.1	90.5
06	WOOD, PLASTICS & COMPOSITES	97.0	17.9	52.4	101.9	119.8	112.0	104.2	119.8	113.0	99.2	70.1	82.8
07	THERMAL & MOISTURE PROTECTION	129.7	21.3	85.7	101.5	120.4	109.2	102.3	120.4	109.6	105.3	67.7	90.0
08	OPENINGS	150.1	15.1	118.2	98.1	128.0	105.1	100.9	128.0	107.3	92.5	66.3	86.3
0920	Plaster & Gypsum Board	154.5	15.3	59.8	94.7	119.8	111.8	97.0	119.8	112.5	104.6	69.1	80.4
0950, 0980	Ceilings & Acoustic Treatment	230.8	15.3	87.4	95.3	119.8	111.6	95.2	119.8	111.6	96.0	69.1	78.1
0960	Flooring	225.0	13.4	161.7	99.8	140.3	111.9	100.4	140.3	112.4	104.8	69.7	94.3
0970, 0990	Wall Finishes & Painting/Coating	203.3	17.2	91.4	96.0	124.2	112.9	94.4	124.2	112.3	105.7	71.9	85.4
09	FINISHES	214.4	17.4	104.6	98.6	124.7	113.2	98.0	124.7	112.9	102.4	69.5	84.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	16.5	83.3	100.0	105.8	101.2	100.0	105.8	101.2	100.0	73.6	94.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	102.8	14.2	67.3	100.1	108.4	103.4	99.9	108.4	103.3	95.5	64.5	83.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	126.9	13.5	67.7	101.5	100.4	100.9	102.5	100.4	101.4	96.8	67.4	81.5
MF2010	WEIGHTED AVERAGE	122.1	24.6	79.7	99.0	116.6	106.6	101.5	116.6	108.1	96.4	70.4	85.1

DIVISION		SOUTH CAROLINA						SOUTH DAKOTA		
		COLUMBIA			FLORENCE			GREENVILLE		
		290 - 292			296			296		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.5	100.5		100.5	100.5		100.5	100.5	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.0	85.9	89.5	107.9	86.0	92.5	102.9	85.6	90.7
0310	Concrete Forming & Accessories	95.4	46.1	52.9	84.6	46.3	51.5	96.0	46.1	52.9
0320	Concrete Reinforcing	96.8	61.0	78.9	93.3	61.2	77.3	93.2	45.9	69.6
0330	Cast-in-Place Concrete	97.9	50.7	78.3	80.9	50.0	68.1	80.9	49.9	68.0
03	CONCRETE	95.9	52.2	74.3	93.3	52.0	72.9	92.2	49.1	70.9
04	MASONRY	85.5	38.3	56.3	74.0	41.6	54.0	72.0	41.6	53.2
05	METALS	92.1	80.8	88.6	93.7	81.2	89.8	93.7	75.7	88.1
06	WOOD, PLASTICS & COMPOSITES	100.4	45.8	69.6	82.1	45.8	61.6	96.0	45.8	67.7
07	THERMAL & MOISTURE PROTECTION	100.0	44.2	77.4	104.5	45.7	80.6	104.4	45.7	80.6
08	OPENINGS	97.5	51.7	86.7	92.6	51.7	82.9	92.5	48.1	82.0
0920	Plaster & Gypsum Board	102.7	44.0	62.8	97.4	44.0	61.0	103.1	44.0	62.9
0950, 0980	Ceilings & Acoustic Treatment	101.2	44.0	63.1	96.9	44.0	61.7	96.0	44.0	61.4
0960	Flooring	99.7	44.4	83.1	98.4	44.4	82.3	103.7	58.2	90.1
0970, 0990	Wall Finishes & Painting/Coating	102.4	68.3	81.9	105.7	68.3	83.2	105.7	68.3	83.2
09	FINISHES	99.7	47.7	70.7	98.5	48.1	70.4	100.2	50.4	72.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	67.9	93.6	100.0	67.9	93.6	100.0	66.2	93.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	53.2	81.2	100.4	53.3	81.5	100.4	53.1	81.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.0	61.1	79.3	96.8	61.1	78.2	99.0	58.0	77.6
MF2010	WEIGHTED AVERAGE	97.2	57.3	79.8	96.2	57.8	79.4	96.2	56.5	78.9

City Cost Indexes

DIVISION		SOUTH DAKOTA														
		MITCHELL			MOBRIDGE			PIERRE			RAPID CITY			SIOUX FALLS		
		573			576			575			577			570 - 571		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.0	98.0		99.0	99.0		98.0	98.0		99.0	99.0		100.0	100.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.2	94.5	93.5	91.2	94.5	93.5	93.0	94.6	94.1	92.8	94.6	94.1	92.4	96.2	95.1
0310	Concrete Forming & Accessories	98.1	37.8	46.1	88.8	37.7	44.7	101.3	39.3	47.8	106.7	37.5	47.0	104.1	41.4	50.0
0320	Concrete Reinforcing	99.9	47.8	73.9	102.5	39.3	70.9	104.3	71.5	87.9	94.0	71.6	82.8	101.7	71.5	86.6
0330	Cast-in-Place Concrete	107.4	43.3	80.8	107.4	44.5	81.3	96.8	43.2	74.6	106.5	43.8	80.5	102.8	44.0	78.4
03	CONCRETE	101.3	42.9	72.5	101.1	41.8	71.8	97.3	48.1	73.0	100.6	47.6	74.4	99.2	49.3	74.6
04	MASONRY	93.9	54.2	69.4	102.5	55.8	73.6	103.2	54.4	73.0	102.6	57.4	74.6	97.5	54.6	70.9
05	METALS	97.4	65.4	87.6	97.5	65.2	87.5	99.7	80.1	93.6	100.2	80.7	94.2	101.4	80.3	94.9
06	WOOD, PLASTICS & COMPOSITES	95.2	37.4	62.6	83.9	37.1	57.5	98.2	37.6	64.0	100.1	34.1	62.9	96.2	40.2	64.6
07	THERMAL & MOISTURE PROTECTION	104.1	46.8	80.9	104.2	48.8	81.7	105.1	47.1	81.5	104.7	49.0	82.1	109.3	49.4	85.0
08	OPENINGS	92.7	38.2	79.8	95.1	37.2	81.4	101.6	47.3	88.7	97.5	45.4	85.2	98.9	48.7	87.0
0920	Plaster & Gypsum Board	104.5	35.7	57.7	97.2	35.4	55.1	97.2	35.9	55.5	105.6	32.3	55.8	97.3	38.6	57.4
0950, 0980	Ceilings & Acoustic Treatment	104.6	35.7	58.7	108.2	35.4	59.7	106.4	35.9	59.5	110.8	32.3	58.6	107.3	38.6	61.6
0960	Flooring	110.7	51.2	93.0	106.4	51.2	89.9	110.5	36.5	88.4	110.4	80.1	101.4	105.9	76.3	97.1
0970, 0990	Wall Finishes & Painting/Coating	95.6	41.5	63.1	95.6	42.6	63.7	99.1	45.5	66.9	95.6	45.5	65.5	93.9	45.5	64.8
09	FINISHES	104.8	40.4	68.9	103.3	40.3	68.2	105.5	38.2	68.0	106.3	44.9	72.1	103.8	47.5	72.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	38.7	87.7	100.0	41.7	88.3	100.0	77.9	95.6	100.0	77.8	95.6	100.0	78.3	95.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.3	40.3	73.2	95.3	40.8	73.4	100.0	64.6	85.8	100.2	65.1	86.1	100.1	39.4	75.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.5	45.0	70.1	99.2	45.9	71.4	104.6	52.4	77.4	95.7	52.5	73.1	97.4	76.9	86.7
MF2010	WEIGHTED AVERAGE	97.5	49.5	76.6	98.1	49.8	77.1	100.8	59.2	82.7	100.0	60.3	82.7	100.0	58.8	82.1

DIVISION		TENNESSEE														
		CHATTANOOGA			COLUMBIA			COOKEVILLE			JACKSON			JOHNSON CITY		
		373 - 374			384			385			383			385		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		104.8	104.8		98.8	98.8		98.8	98.8		104.8	104.8		98.7	98.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.4	99.6	100.7	86.7	88.1	87.7	92.0	87.6	88.9	95.1	97.9	97.1	110.7	88.4	95.1
0310	Concrete Forming & Accessories	97.9	56.6	62.3	82.3	63.5	66.1	82.5	36.3	42.6	89.0	46.0	51.9	84.6	39.4	45.6
0320	Concrete Reinforcing	89.9	63.2	76.6	87.7	63.2	75.4	87.7	63.2	75.4	87.6	64.0	75.8	90.5	62.1	76.3
0330	Cast-in-Place Concrete	100.0	60.4	83.5	91.8	52.4	75.5	104.0	44.3	79.2	101.6	50.1	80.2	80.4	61.0	72.4
03	CONCRETE	93.8	60.8	77.5	93.6	61.2	77.6	103.2	46.3	75.1	94.7	52.7	74.0	100.2	53.2	77.0
04	MASONRY	108.3	49.7	72.1	118.0	55.5	79.3	112.3	44.5	70.4	118.2	48.0	74.8	123.3	45.6	75.2
05	METALS	97.7	87.4	94.5	91.5	87.6	90.3	91.6	87.5	90.3	93.8	87.6	91.9	94.9	86.4	92.3
06	WOOD, PLASTICS & COMPOSITES	107.1	58.6	79.8	73.0	65.9	69.0	73.2	34.4	51.3	88.9	46.4	65.0	79.1	37.8	55.8
07	THERMAL & MOISTURE PROTECTION	100.1	57.6	82.8	93.7	60.2	80.1	94.1	46.5	74.8	96.0	55.0	79.3	95.2	53.5	78.3
08	OPENINGS	101.7	57.1	91.2	92.5	59.3	84.6	92.5	43.2	80.8	100.1	52.9	88.9	98.0	46.2	85.7
0920	Plaster & Gypsum Board	82.0	57.8	65.6	85.1	65.3	71.6	85.1	32.8	49.5	86.8	45.2	58.5	99.3	36.3	56.5
0950, 0980	Ceilings & Acoustic Treatment	97.1	57.8	71.0	81.5	65.3	70.7	81.5	32.8	49.1	90.3	45.2	60.3	93.3	36.3	55.4
0960	Flooring	98.2	57.7	86.1	94.5	20.9	72.5	94.5	59.7	84.1	91.6	41.5	76.6	97.2	41.4	80.5
0970, 0990	Wall Finishes & Painting/Coating	97.0	53.9	71.1	87.7	34.1	55.5	87.7	37.3	57.4	89.2	50.6	66.0	94.3	43.0	63.5
09	FINISHES	94.5	56.6	73.4	92.3	53.2	70.5	92.8	39.3	63.0	91.9	44.7	65.6	99.1	38.9	65.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	42.4	88.5	100.0	49.2	89.8	100.0	42.1	88.4	100.0	44.2	88.8	100.0	44.3	88.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	61.9	84.9	97.4	79.8	90.3	97.4	74.2	88.1	100.1	69.5	87.8	100.0	60.4	84.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.9	69.8	85.1	92.6	58.8	75.0	94.4	63.1	78.0	99.5	59.9	78.8	91.9	47.4	68.7
MF2010	WEIGHTED AVERAGE	99.5	65.5	84.7	95.3	67.5	83.2	96.4	60.4	80.7	98.3	62.5	82.7	99.2	56.7	80.7

DIVISION		TEXAS														
		MCKENZIE			MEMPHIS			NASHVILLE			ABILENE			AMARILLO		
		382			375,380 - 381			370 - 372			795 - 796			790 - 791		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.8	99.8		103.2	103.2		105.2	105.2		89.7	89.7		89.7	89.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.7	87.7	88.9	93.0	94.6	94.1	97.7	100.3	99.6	94.0	86.7	88.8	92.7	87.7	89.2
0310	Concrete Forming & Accessories	90.1	39.0	46.0	95.4	64.7	68.9	99.3	65.7	70.3	100.3	38.9	47.3	101.2	52.5	59.2
0320	Concrete Reinforcing	87.8	63.9	75.9	95.5	64.5	80.0	97.2	63.6	80.4	89.4	51.7	70.6	93.2	51.7	72.5
0330	Cast-in-Place Concrete	101.8	58.3	83.7	92.4	61.9	79.8	89.4	66.0	79.7	100.1	47.4	78.2	92.5	53.9	76.5
03	CONCRETE	101.9	52.4	77.5	91.6	65.2	78.6	90.6	66.9	78.9	98.3	45.5	72.2	97.5	53.7	75.9
04	MASONRY	116.5	47.0	73.5	100.1	63.2	77.3	91.0	59.3	71.4	98.7	56.9	72.9	100.5	57.7	74.0
05	METALS	91.6	87.8	90.4	99.0	89.3	96.0	99.5	88.7	96.2	100.6	68.5	90.7	96.1	68.9	87.7
06	WOOD, PLASTICS & COMPOSITES	82.1	37.1	56.7	96.4	66.6	79.6	106.2	66.5	83.8	104.2	37.3	66.4	98.2	54.7	73.7
07	THERMAL & MOISTURE PROTECTION	94.1	49.5	76.0	95.5	64.0	82.7	97.1	61.7	82.7	101.2	49.6	80.2	101.8	53.5	82.2
08	OPENINGS	92.5	45.1	81.3	101.3	64.6	92.6	101.5	64.7	92.8	92.8	41.0	80.5	94.3	52.8	84.5
0920	Plaster & Gypsum Board	88.0	35.6	52.4	92.8	65.9	74.5	95.0	65.9	75.2	86.2	35.8	51.9	92.4	53.8	66.2
0950, 0980	Ceilings & Acoustic Treatment	81.5	35.6	51.0	95.4	65.9	75.8	92.1	65.9	74.6	93.3	35.8	55.1	102.3	53.8	70.0
0960	Flooring	97.2	40.1	80.1	98.9	36.7	80.3	97.4	65.4	87.9	113.4	77.9	102.8	108.3	77.9	99.2
0970, 0990	Wall Finishes & Painting/Coating	87.7	50.6	65.4	91.9	56.0	70.3	95.3	73.6	82.2	98.8	50.2	69.6	98.9	49.5	69.2
09	FINISHES	93.9	39.1	63.3	96.5	58.4	75.3	94.8	66.4	79.0	96.2	46.4	68.5	99.3	56.9	75.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	28.2	85.6	100.0	82.1	96.4	100.0	82.6	96.5	100.0	76.1	95.2	100.0	67.7	93.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.4	69.8	86.3	100.0	74.9	90.0	100.0	83.2	93.3	100.3	46.0	78.5	100.1	50.8	80.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.1	64.4	78.6	100.9	64.9	82.1	97.6	63.1	79.6	94.9	48.7	70.7	98.7	64.6	80.9
MF2010	WEIGHTED AVERAGE	96.6	60.4	80.9	98.5	71.3	86.7	97.9	74.1	87.5	98.3	53.6	78.8	98.2	60.0	81.6

City Cost Indexes

DIVISION		TEXAS																	
		BEAUMONT			BROWNWOOD			BRYAN			CHILDRESS			CORPUS CHRISTI			DALLAS		
		776 - 777			768			778			792			783 - 784			752 - 753		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	91.2	91.2		89.7	89.7		91.2	91.2		89.7	89.7		96.2	96.2		99.1	99.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	89.0	87.6	88.0	100.5	86.1	90.4	80.7	90.3	87.5	103.1	87.0	91.8	138.3	82.8	99.3	107.7	88.2	94.0
0310	Concrete Forming & Accessories	106.7	48.4	56.4	97.7	33.0	41.8	84.5	45.5	50.8	98.7	61.9	66.9	98.8	39.8	47.9	97.5	64.1	68.7
0320	Concrete Reinforcing	89.0	41.5	65.3	91.7	50.7	71.3	91.3	49.5	70.4	89.5	51.0	70.3	84.6	47.2	65.9	99.1	52.8	76.0
0330	Cast-in-Place Concrete	86.8	51.7	72.2	105.3	42.7	79.3	69.6	65.7	68.0	102.7	49.4	80.6	109.1	46.9	83.3	96.4	54.8	79.1
03	CONCRETE	96.2	49.3	73.1	105.2	40.8	73.4	80.7	54.5	67.8	107.8	56.2	82.3	99.0	45.5	72.6	99.6	60.1	80.1
04	MASONRY	99.8	57.3	73.5	130.0	48.3	79.5	137.2	56.3	87.2	102.9	49.8	70.0	88.6	51.4	65.6	101.9	56.5	73.8
05	METALS	95.2	64.6	85.8	97.3	62.8	86.6	94.8	70.5	87.3	98.1	65.7	88.1	92.7	75.0	87.2	100.6	79.6	94.1
06	WOOD, PLASTICS & COMPOSITES	114.0	48.4	77.0	101.5	29.2	60.7	79.0	39.6	56.8	103.5	67.5	83.2	116.8	38.2	72.4	102.3	67.6	82.7
07	THERMAL & MOISTURE PROTECTION	103.5	55.5	84.0	100.1	44.1	77.4	95.4	56.2	79.5	101.7	48.8	80.3	102.3	48.4	80.4	92.1	62.5	80.1
08	OPENINGS	94.4	45.2	82.8	91.6	37.0	78.7	97.4	45.9	85.2	90.0	56.6	82.1	106.7	39.5	90.8	103.9	58.4	93.2
0920	Plaster & Gypsum Board	97.4	47.3	63.4	87.8	27.5	46.8	84.7	38.3	53.1	85.8	66.9	73.0	93.9	36.7	54.9	96.7	66.9	76.4
0950, 0980	Ceilings & Acoustic Treatment	95.5	47.3	63.5	91.7	27.5	49.0	89.0	38.3	55.3	91.5	66.9	75.2	91.5	36.7	55.0	103.4	66.9	79.1
0960	Flooring	109.1	74.3	98.7	109.2	45.5	90.1	84.2	62.9	77.9	111.6	41.6	90.7	115.4	64.2	100.1	107.8	48.6	90.1
0970, 0990	Wall Finishes & Painting/Coating	96.1	48.6	67.6	96.3	29.8	56.3	92.6	62.5	74.5	98.8	38.6	62.7	115.0	57.7	80.6	105.5	51.5	73.1
09	FINISHES	90.2	52.7	69.4	95.3	34.0	61.2	79.5	48.8	62.4	96.4	56.8	74.4	103.7	45.6	71.3	100.4	60.4	78.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.4	95.9	100.0	37.3	87.4	100.0	79.8	96.0	100.0	70.0	94.0	100.0	78.3	95.7	100.0	82.0	96.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	59.7	83.9	95.3	49.1	76.8	95.3	65.9	83.5	95.4	52.3	78.1	100.2	40.0	76.0	100.0	62.1	84.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.1	70.8	81.0	93.2	43.7	67.4	90.2	67.7	78.4	94.9	43.4	68.0	91.8	61.4	76.0	95.7	65.2	79.7
MF2010	WEIGHTED AVERAGE	96.7	61.2	81.2	98.5	48.4	76.7	94.1	63.0	80.5	97.9	56.9	80.0	99.7	53.7	79.6	100.1	65.8	85.2

DIVISION		TEXAS																	
		DEL RIO			DENTON			EASTLAND			EL PASO			FORT WORTH			GALVESTON		
		768			768			768			798 - 799,885			760 - 761			775		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	89.0	89.0		95.7	95.7		89.7	89.7		89.8	89.8		89.7	89.7		100.1	100.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	119.1	85.4	95.4	100.5	79.3	85.6	103.1	86.0	91.1	95.1	86.1	88.8	97.4	87.1	90.1	108.0	88.1	94.1
0310	Concrete Forming & Accessories	95.3	36.5	44.6	104.6	32.3	42.2	98.5	35.8	44.4	97.2	43.8	51.1	96.9	63.5	68.1	94.2	65.6	69.5
0320	Concrete Reinforcing	85.2	46.7	66.0	93.0	51.0	72.1	92.0	50.7	71.3	97.5	45.8	71.7	97.3	52.7	75.0	90.8	62.8	76.8
0330	Cast-in-Place Concrete	117.4	42.8	86.4	81.5	44.4	66.1	111.3	43.3	83.1	96.6	41.3	73.7	98.6	50.7	78.7	92.3	66.9	81.8
03	CONCRETE	119.8	41.7	81.3	82.8	42.0	62.7	110.0	42.4	76.6	99.9	44.3	72.5	100.7	57.7	79.5	97.2	67.1	82.3
04	MASONRY	103.6	50.0	70.4	138.8	47.1	82.1	99.9	48.2	67.9	96.5	46.9	65.8	98.4	56.4	72.4	95.9	56.4	71.5
05	METALS	92.5	60.8	82.7	96.9	75.5	90.3	97.1	63.2	86.6	95.3	62.6	85.2	98.8	68.5	89.5	96.3	88.8	94.0
06	WOOD, PLASTICS & COMPOSITES	97.0	34.6	61.8	112.9	31.9	67.2	108.3	32.8	65.7	99.9	45.8	69.4	99.5	67.5	81.4	96.4	66.4	79.4
07	THERMAL & MOISTURE PROTECTION	99.2	43.6	76.6	98.3	44.1	76.3	100.5	44.2	77.6	98.9	54.5	80.9	98.4	52.6	79.8	94.5	65.3	82.6
08	OPENINGS	99.3	33.9	83.9	107.8	37.5	91.1	72.9	39.0	64.9	91.2	43.9	80.0	98.7	58.3	89.2	101.8	64.0	92.9
0920	Plaster & Gypsum Board	89.7	33.0	51.2	92.3	30.2	50.0	87.8	31.2	49.3	93.7	44.6	60.3	92.0	66.9	74.9	92.0	65.7	74.1
0950, 0980	Ceilings & Acoustic Treatment	87.8	33.0	51.4	96.2	30.2	52.2	91.7	31.2	51.4	95.9	44.6	61.7	102.3	66.9	78.8	91.6	65.7	74.4
0960	Flooring	97.3	34.7	78.6	102.5	43.5	84.8	141.2	45.5	112.6	114.0	63.5	98.9	137.1	41.4	108.5	98.1	62.9	87.6
0970, 0990	Wall Finishes & Painting/Coating	101.3	38.4	63.5	106.2	29.6	60.2	97.8	30.5	57.4	93.2	34.9	58.2	95.2	51.1	68.7	104.3	47.0	69.9
09	FINISHES	95.8	36.0	62.5	92.0	33.5	59.4	104.8	36.3	66.6	99.2	46.5	69.9	107.4	58.8	80.3	88.8	63.0	74.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	37.1	87.4	100.0	36.0	87.2	100.0	38.4	87.7	100.0	77.3	95.4	100.0	81.7	96.3	100.0	84.3	96.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	46.9	75.8	95.3	37.9	72.3	95.3	49.4	76.9	100.0	34.2	73.6	100.0	57.7	83.1	95.2	66.0	83.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.0	30.1	60.6	95.6	43.8	68.6	93.1	43.8	67.3	92.7	54.9	73.0	94.5	62.4	77.8	91.7	69.5	80.1
MF2010	WEIGHTED AVERAGE	99.4	46.2	76.3	98.2	46.6	75.7	96.5	49.1	75.9	97.2	50.6	76.9	99.6	62.5	83.5	96.3	69.7	84.7

DIVISION		TEXAS																	
		GIDDINGS			GREENVILLE			HOUSTON			HUNTSVILLE			LAREDO			LONGVIEW		
		789			754			770 - 772			773			780			756		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	89.0	89.0		96.7	96.7		100.0	100.0		91.2	91.2		89.0	89.0		91.5	91.5	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.0	85.4	91.3	101.0	83.5	88.7	106.7	87.9	93.5	95.8	87.9	90.3	99.1	86.8	90.5	97.3	90.3	92.4
0310	Concrete Forming & Accessories	93.0	55.5	60.7	89.1	27.3	35.7	96.3	65.8	69.9	91.8	55.4	60.4	95.3	40.0	47.5	85.5	28.1	35.9
0320	Concrete Reinforcing	85.8	46.8	66.3	99.6	24.9	62.3	90.6	63.3	77.0	91.5	50.5	71.0	85.2	47.6	66.4	98.4	22.7	60.6
0330	Cast-in-Place Concrete	99.5	42.9	76.0	87.8	37.7	67.0	89.5	66.9	80.1	95.6	48.2	75.9	84.1	59.3	73.8	102.1	35.0	74.2
03	CONCRETE	96.5	50.2	73.7	92.2	32.6	62.8	94.9	67.2	81.3	103.8	52.8	78.7	91.4	49.1	70.6	108.4	30.8	70.1
04	MASONRY	111.8	50.0	73.5	159.0	46.1	89.1	95.8	66.6	77.7	135.8	51.6	83.7	97.3	58.6	73.3	154.6	42.0	85.0
05	METALS	92.0	61.8	82.6	97.9	63.6	87.3	99.2	89.7	96.3	94.7	66.3	85.9	95.0	64.0	85.5	91.2	50.5	78.7
06	WOOD, PLASTICS & COMPOSITES	96.0	59.4	75.4	92.3	26.3	55.1	98.8	66.4	80.5	88.3	58.2	71.3	97.0	38.1	63.7	86.2	28.4	53.6
07	THERMAL & MOISTURE PROTECTION	99.9	47.7	78.7	92.2	39.5	70.8	94.1	68.1	83.6	96.3	48.2	76.8	98.2	51.9	79.4	93.5	34.9	69.7
08	OPENINGS	98.5	49.0	86.7	102.1	26.0	84.1	104.4	64.0	94.8	97.4	48.5	85.8	99.2	39.4	85.0	91.7	26.0	76.1
0920	Plaster & Gypsum Board	88.6	58.7	68.3	90.4	24.5	45.5	94.5	65.7	74.9	89.5	57.4	67.7	90.8	36.7	54.0	88.7	26.8	46.6
0950, 0980	Ceilings & Acoustic Treatment	87.8	58.7	68.4	99.0	24.5	49.4	97.0	65.7	76.2	89.0	57.4	67.9	92.2	36.7	55.2	95.4	26.8	49.7
0960	Flooring	97.8	34.7	79.0	103.7	47.8	87.0	99.1	62.9	88.3	87.4	34.7	71.7	97.1	64.2	87.3	108.1	35.1	86.2
0970, 0990	Wall Finishes & Painting/Coating	101.3	30.5	58.8	105.5	25.1	57.2	104.3	62.5	79.2	92.6	31.3	55.8	101.3	54.4	73.1	95.1	29.3	55.6
09	FINISHES	94.7	50.2	69.9	96.9	30.4	59.8	96.0	64.7	78.5	81.9	49.9	64.1	95.2	45.1	67.3	101.0	29.4	61.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	42.9	88.6	100.0	34.4	86.9	100.0	84.3	96.9	100.0	43.3	88.6	100.0	76.3	95.2	100.0	21.9	84.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.3	62.5	82.1	95.2	43.5	74.4	100.0	66.1	86.4	95.3	63.3	82.5	100.1	38.8	75.5	95.1	27.5	68.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.8	43.4	66.1	92.3	27.1	58.3	93.7	67.8	80.2	90.2	43.4	65.8	94.2	59.9	76.3	92.7	53.2	72.0
MF2010	WEIGHTED AVERAGE	96.4	55.6	78.6	99.4	42.2	74.5	98.7	70.9	86.6	97.2	56.9	79.6	97.1	53.7	78.2	99.0	40.5	73.5

City Cost Indexes

DIVISION		TEXAS																	
		LUBBOCK			LUFKIN			MCALLEN			MCKINNEY			MIDLAND			ODESSA		
		793 - 794			759			785			759			797			797		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.2	98.2		91.5	91.5		96.4	96.4		96.7	96.7		93.2	93.2		89.7	89.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	116.1	85.0	94.3	92.5	91.8	92.0	142.5	82.9	100.6	97.4	83.6	87.7	118.7	85.0	95.1	94.2	87.0	89.1
0310	Concrete Forming & Accessories	99.1	51.0	57.6	88.6	56.8	61.2	99.9	35.8	44.6	88.2	36.3	43.4	103.0	51.0	58.2	100.2	50.9	57.7
0320	Concrete Reinforcing	90.5	51.7	71.1	100.2	62.4	81.3	84.8	47.1	66.0	99.6	51.1	75.4	91.4	50.9	71.2	89.4	50.9	70.2
0330	Cast-in-Place Concrete	100.3	48.4	78.8	91.3	44.7	72.0	118.5	45.3	88.1	82.4	45.2	66.9	106.6	48.6	82.5	100.1	47.5	78.3
03	CONCRETE	96.9	52.0	74.7	100.8	54.3	77.8	106.6	43.1	75.3	87.6	44.0	66.0	101.6	51.9	77.1	98.3	50.7	74.8
04	MASONRY	98.1	55.7	71.8	118.7	52.3	77.6	103.2	51.4	71.1	171.0	48.4	95.1	114.8	42.0	69.7	98.7	42.0	63.6
05	METALS	104.1	80.1	96.7	98.0	69.1	89.1	92.4	74.5	86.9	97.8	74.4	90.6	102.4	79.0	95.2	99.9	67.1	89.8
06	WOOD, PLASTICS & COMPOSITES	104.1	54.9	76.3	94.3	59.4	74.6	115.4	33.6	69.2	91.0	36.4	60.2	109.1	54.9	78.5	104.2	54.7	76.3
07	THERMAL & MOISTURE PROTECTION	90.8	52.7	75.3	93.3	48.0	74.9	102.6	45.0	79.2	92.0	45.9	73.3	91.0	47.4	73.3	101.2	46.6	79.0
08	OPENINGS	103.6	49.4	90.8	69.6	53.4	65.8	103.4	36.8	87.6	102.0	39.8	87.3	102.5	49.1	89.9	92.8	49.0	82.4
0920	Plaster & Gypsum Board	86.7	53.8	64.3	87.7	58.7	68.0	94.9	31.9	52.0	89.6	34.8	52.4	88.3	53.8	64.8	86.2	53.8	64.2
0950, 0980	Ceilings & Acoustic Treatment	95.1	53.8	67.6	88.3	58.7	68.6	92.2	31.9	52.1	99.0	34.8	56.3	92.4	53.8	66.7	93.3	53.8	67.0
0960	Flooring	107.0	39.3	86.7	143.4	38.2	112.0	114.9	65.0	100.0	103.3	35.6	83.1	108.2	48.6	90.4	113.4	48.6	94.0
0970, 0990	Wall Finishes & Painting/Coating	110.2	49.5	73.7	95.1	37.8	60.6	115.0	28.9	63.2	105.5	41.2	66.9	110.2	49.5	73.7	98.8	49.5	69.2
09	FINISHES	98.8	48.8	70.9	109.1	52.0	77.3	104.3	39.8	68.4	96.4	36.7	63.1	99.2	50.7	72.1	96.2	50.6	70.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	77.8	95.6	100.0	70.8	94.2	100.0	76.0	95.2	100.0	39.7	87.9	100.0	78.6	95.7	100.0	78.3	95.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.8	45.2	77.9	95.1	63.5	82.4	95.3	30.8	69.4	95.2	41.4	73.6	94.9	45.3	75.0	100.3	45.3	78.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.6	49.6	70.6	94.0	43.4	67.6	91.6	34.2	61.6	92.4	45.2	67.8	93.5	40.4	65.8	95.0	40.3	66.4
MF2010	WEIGHTED AVERAGE	100.0	56.3	81.0	95.9	59.1	79.9	99.7	46.6	76.6	99.3	48.9	77.3	99.9	53.6	79.7	98.2	52.5	78.3

DIVISION		TEXAS																	
		PALESTINE			SAN ANGELO			SAN ANTONIO			TEMPLE			TEXARKANA			TYLER		
		758			759			781 - 782			765			755			757		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		91.5	91.5		89.7	89.7		91.5	91.5		89.7	89.7		91.5	91.5		91.5	91.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.6	91.1	93.3	97.0	88.1	90.8	101.8	91.4	94.5	86.0	85.9	85.9	87.0	91.1	89.9	96.6	91.5	93.1
0310	Concrete Forming & Accessories	80.1	55.8	59.1	98.0	36.5	44.9	94.5	54.8	60.3	101.3	39.7	48.1	95.4	34.0	42.4	90.3	33.1	40.9
0320	Concrete Reinforcing	97.7	50.7	74.2	91.6	50.9	71.3	91.8	49.1	70.5	91.8	47.4	69.6	97.6	52.4	75.0	98.4	53.0	75.7
0330	Cast-in-Place Concrete	83.5	42.6	66.5	99.3	46.6	77.4	84.5	65.4	76.6	81.4	48.4	67.7	84.1	43.4	67.2	100.2	42.5	76.3
03	CONCRETE	102.9	50.9	77.2	100.4	43.9	72.5	92.6	58.3	75.7	86.0	45.2	65.9	93.6	42.0	68.1	108.0	41.4	75.1
04	MASONRY	113.5	48.5	73.3	126.6	41.6	74.0	98.9	66.5	78.8	137.9	48.4	82.5	175.4	44.7	94.5	164.8	54.4	96.5
05	METALS	97.7	62.7	86.9	97.4	66.5	87.9	96.1	68.7	87.6	97.1	62.8	86.5	91.1	66.9	83.6	97.6	68.0	88.5
06	WOOD, PLASTICS & COMPOSITES	84.7	59.4	70.4	101.8	36.1	64.7	96.7	52.8	71.9	111.0	39.4	70.6	98.1	32.3	61.0	96.0	30.5	59.0
07	THERMAL & MOISTURE PROTECTION	93.7	46.4	74.5	100.0	42.1	76.5	95.9	64.3	83.1	99.6	45.0	77.4	93.2	47.2	74.5	93.6	53.2	77.2
08	OPENINGS	69.5	50.7	65.1	91.7	38.8	79.2	99.9	51.7	88.5	69.6	41.8	63.0	91.7	37.9	78.9	69.5	36.9	61.8
0920	Plaster & Gypsum Board	84.4	58.7	66.9	87.8	34.6	51.6	88.8	51.8	63.6	87.8	38.0	53.9	93.2	30.7	50.7	87.7	28.9	47.7
0950, 0980	Ceilings & Acoustic Treatment	88.3	58.7	68.6	91.7	34.6	53.7	91.2	51.8	65.0	91.7	38.0	56.0	95.4	30.7	52.4	88.3	28.9	48.7
0960	Flooring	135.3	58.9	112.5	109.2	34.7	86.9	97.6	64.3	87.6	143.4	41.7	113.0	115.6	59.4	98.7	145.3	37.0	112.9
0970, 0990	Wall Finishes & Painting/Coating	95.1	30.5	56.3	96.3	49.5	68.2	98.5	54.4	72.0	97.8	38.5	62.2	95.1	39.4	61.6	95.1	39.4	61.6
09	FINISHES	106.9	54.4	77.7	95.0	36.4	62.4	94.8	55.4	72.8	104.1	39.6	68.2	103.1	38.1	66.9	109.9	32.6	66.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	40.7	88.1	100.0	75.0	95.0	100.0	80.6	96.1	100.0	36.8	87.3	100.0	74.9	95.0	100.0	74.7	94.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.1	58.5	80.4	95.3	44.6	75.0	100.0	64.5	85.8	95.3	48.2	76.4	95.1	32.9	70.2	95.1	57.7	80.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.1	43.4	65.7	97.2	45.8	70.4	94.3	60.0	76.4	94.3	64.9	79.0	93.8	61.1	76.8	92.7	55.0	73.0
MF2010	WEIGHTED AVERAGE	95.4	55.8	78.2	98.2	49.5	77.0	97.5	64.5	83.1	95.0	52.7	76.6	98.4	49.7	77.2	98.9	54.6	79.6

DIVISION		TEXAS																UTAH			
		VICTORIA			WACO			WAXAHACKIE			WHARTON			WICHITA FALLS			LOGAN				
		779			766 - 767			751			774			763			843				
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT		99.0	99.0		89.7	89.7		96.7	96.7		100.1	100.1		89.7	89.7		97.2	97.2		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	112.7	82.3	91.4	94.2	87.0	89.2	99.0	84.4	88.8	118.4	85.5	95.3	94.9	86.7	89.1	93.4	96.2	95.4		
0310	Concrete Forming & Accessories	94.0	35.1	43.2	99.9	39.6	47.9	88.2	59.5	63.5	88.7	36.7	43.9	99.9	37.2	45.8	104.8	58.1	64.5		
0320	Concrete Reinforcing	87.2	30.3	58.8	91.5	49.4	70.5	99.6	51.1	75.4	90.7	50.2	70.5	91.5	51.7	71.6	102.3	80.2	91.3		
0330	Cast-in-Place Concrete	103.6	41.0	77.7	88.1	65.8	78.8	86.9	41.7	68.1	106.5	51.2	83.5	94.1	44.7	73.6	86.9	72.8	81.0		
03	CONCRETE	104.5	38.5	71.9	93.0	51.7	72.6	91.3	53.2	72.5	108.8	46.4	78.0	95.8	43.8	70.1	107.9	67.9	88.2		
04	MASONRY	112.4	34.1	64.0	98.3	53.7	70.7	159.7	48.5	90.9	97.0	44.6	64.6	98.8	56.9	72.9	103.9	59.7	76.5		
05	METALS	94.9	70.3	87.3	99.4	67.0	89.4	97.9	77.0	91.4	96.3	78.5	90.8	99.4	68.5	89.8	101.0	78.2	94.0		
06	WOOD, PLASTICS & COMPOSITES	99.9	35.9	63.8	109.2	35.1	67.4	91.0	67.5	77.8	89.4	32.6	57.3	109.2	35.0	67.3	81.5	56.2	67.2		
07	THERMAL & MOISTURE PROTECTION	98.4	39.5	74.5	100.5	46.9	78.8	92.1	46.3	73.5	94.8	49.3	76.3	100.5	50.5	80					

City Cost Indexes

DIVISION		UTAH									VERMONT					
		OGDEN			PRICE			PROVO			SALT LAKE CITY			BELLOWS FALLS		
		842,844			845			846 - 847			840 - 841			051		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	97.2	97.2		96.3	96.3		96.3	96.3		97.2	97.2		100.6	100.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	82.2	96.2	92.1	90.8	94.6	93.5	89.8	94.6	93.2	81.8	96.2	91.9	82.6	100.1	94.9
0310	Concrete Forming & Accessories	104.8	58.1	64.5	107.1	49.4	57.3	106.3	58.0	64.6	107.3	58.0	64.7	100.2	87.5	89.3
0320	Concrete Reinforcing	102.0	80.2	91.1	109.8	80.1	95.0	110.7	80.2	95.5	104.3	80.2	92.3	83.0	87.3	85.2
0330	Cast-in-Place Concrete	88.2	72.8	81.8	87.0	60.0	75.8	87.0	72.7	81.1	96.4	72.7	86.6	89.5	113.1	99.3
03	CONCRETE	97.5	67.9	82.9	109.3	59.6	84.8	107.8	67.8	88.1	116.9	67.8	92.6	93.5	96.2	94.8
04	MASONRY	97.8	59.7	74.2	109.1	59.7	78.5	109.3	59.7	78.6	111.0	59.7	79.3	94.6	96.9	96.0
05	METALS	101.5	78.2	94.3	98.3	77.6	91.9	99.3	78.0	92.7	106.1	78.0	97.4	95.6	89.3	93.6
06	WOOD, PLASTICS & COMPOSITES	81.5	56.2	67.2	84.4	45.3	62.3	82.9	56.2	67.8	83.2	56.2	68.0	102.2	85.5	92.8
07	THERMAL & MOISTURE PROTECTION	96.9	61.8	82.6	99.5	59.4	83.3	99.5	61.8	84.2	103.8	61.8	86.8	98.0	84.8	92.7
08	OPENINGS	94.3	57.1	85.5	98.3	50.1	86.9	98.3	57.1	88.5	96.1	57.1	86.9	103.5	88.1	99.9
0920	Plaster & Gypsum Board	75.6	54.8	61.4	77.9	43.5	54.5	76.0	54.8	61.6	83.0	54.8	63.8	99.8	84.4	89.3
0950, 0980	Ceilings & Acoustic Treatment	105.1	54.8	71.6	105.1	43.5	64.2	105.1	54.8	71.6	99.2	54.8	69.6	92.3	84.4	87.1
0960	Flooring	98.0	48.6	83.3	101.2	36.1	81.8	100.9	48.6	85.3	102.2	48.6	86.2	101.6	106.5	103.1
0970, 0990	Wall Finishes & Painting/Coating	102.9	62.0	78.3	102.9	38.3	64.1	102.9	49.0	70.5	106.5	49.0	71.9	95.7	106.8	102.3
09	FINISHES	96.5	56.0	74.0	99.5	44.5	68.9	99.1	54.6	74.3	98.2	54.6	73.9	97.2	92.6	94.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	54.1	90.8	100.0	47.0	89.4	100.0	54.0	90.8	100.0	54.0	90.8	100.0	100.3	100.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	69.0	87.6	97.5	68.6	85.9	100.0	69.0	87.6	100.1	69.0	87.6	95.2	98.5	96.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.7	74.3	84.5	101.2	74.3	87.1	96.2	61.2	77.9	98.6	61.2	79.1	98.6	91.5	94.9
MF2010	WEIGHTED AVERAGE	97.9	68.8	85.2	100.1	65.3	84.9	100.1	66.7	85.6	102.2	66.8	86.8	96.6	94.7	95.8

DIVISION		VERMONT											
		BRATTLEBORO			BURLINGTON			GUILDHALL			MONTPELIER		
		053			054			059			056		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.6	100.6		100.6	100.6		100.6	100.6		100.6	100.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	83.4	100.1	95.1	86.2	100.0	95.9	81.7	98.7	93.6	86.6	99.8	95.8
0310	Concrete Forming & Accessories	100.5	87.4	89.2	98.0	89.6	90.8	98.1	80.1	82.6	101.8	86.1	88.2
0320	Concrete Reinforcing	82.2	87.3	84.7	105.7	87.2	96.4	83.8	87.2	85.5	89.0	87.2	88.1
0330	Cast-in-Place Concrete	92.3	113.1	100.9	102.6	112.0	106.5	86.8	103.2	93.6	105.0	111.9	107.9
03	CONCRETE	95.5	96.2	95.9	104.0	96.7	100.4	91.0	89.5	90.3	102.8	95.2	99.0
04	MASONRY	101.1	96.9	98.5	104.8	95.4	99.0	101.3	79.6	87.8	100.1	95.4	97.2
05	METALS	95.5	89.2	93.6	104.0	88.4	99.2	95.6	88.3	93.3	100.2	88.3	96.5
06	WOOD, PLASTICS & COMPOSITES	102.6	85.5	92.9	98.3	90.3	93.8	98.5	85.5	91.2	96.4	85.5	90.3
07	THERMAL & MOISTURE PROTECTION	98.1	80.0	90.8	104.3	82.5	95.4	97.9	72.6	87.6	105.0	82.0	95.6
08	OPENINGS	103.5	88.1	99.9	107.5	86.4	102.5	103.5	83.8	98.8	103.8	83.8	99.1
0920	Plaster & Gypsum Board	99.8	84.4	89.3	100.5	89.3	92.9	106.1	84.4	91.3	105.4	84.4	91.1
0950, 0980	Ceilings & Acoustic Treatment	92.3	84.4	87.1	96.0	89.3	91.6	92.3	84.4	87.1	102.5	84.4	90.5
0960	Flooring	101.7	106.5	103.2	103.1	106.5	104.1	104.6	106.5	105.2	104.0	106.5	104.8
0970, 0990	Wall Finishes & Painting/Coating	95.7	106.8	102.3	100.4	85.3	91.4	95.7	85.3	89.4	100.5	85.3	91.4
09	FINISHES	97.3	92.6	94.7	99.1	92.7	95.5	98.8	85.9	91.6	101.0	89.8	94.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	100.3	100.1	100.0	100.2	100.0	100.0	94.3	98.9	100.0	99.7	99.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	98.4	96.5	99.9	73.3	89.3	95.2	65.3	83.2	95.0	73.3	86.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.6	91.5	94.9	98.0	62.6	79.5	98.6	62.6	79.8	98.0	62.6	79.5
MF2010	WEIGHTED AVERAGE	97.2	94.5	96.0	101.5	85.1	94.4	96.8	79.2	89.1	99.2	84.3	92.7

DIVISION		VERMONT											
		WHITE RIVER JCT.			ALEXANDRIA			ARLINGTON			BRISTOL		
		050			223			222			242		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.6	100.6		102.1	102.1		100.8	100.8		100.8	100.8	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.7	98.8	94.9	113.5	89.3	96.5	123.7	87.3	98.2	107.8	85.7	92.3
0310	Concrete Forming & Accessories	95.0	80.7	82.7	93.3	73.6	76.3	92.5	73.0	75.7	88.4	43.4	49.6
0320	Concrete Reinforcing	83.0	87.2	85.1	85.0	87.0	86.0	95.9	87.0	91.5	95.9	67.3	81.6
0330	Cast-in-Place Concrete	92.3	104.1	97.2	107.5	82.2	97.0	104.6	81.4	95.0	104.1	49.1	81.3
03	CONCRETE	97.3	90.1	93.7	101.2	80.1	90.8	105.6	79.6	92.8	102.1	51.7	77.2
04	MASONRY	112.6	81.2	93.1	86.0	72.9	77.8	99.1	71.3	81.9	89.1	52.3	66.3
05	METALS	95.6	88.3	93.3	102.5	97.0	100.8	101.1	97.4	99.9	99.9	85.8	95.6
06	WOOD, PLASTICS & COMPOSITES	95.9	85.5	90.0	98.1	71.9	83.3	94.4	71.9	81.7	86.6	40.9	60.8
07	THERMAL & MOISTURE PROTECTION	98.2	73.3	88.1	103.2	82.4	94.7	105.1	81.2	95.4	104.7	61.3	87.1
08	OPENINGS	103.5	83.8	98.8	96.4	75.6	91.5	94.6	75.6	90.1	97.4	46.8	85.5
0920	Plaster & Gypsum Board	96.5	84.4	88.3	108.4	70.9	82.9	104.4	70.9	81.6	100.1	38.9	58.4
0950, 0980	Ceilings & Acoustic Treatment	92.3	84.4	87.1	97.7	70.9	79.9	95.1	70.9	79.0	94.2	38.9	57.4
0960	Flooring	99.7	106.5	101.8	106.7	84.5	100.0	105.2	82.7	98.5	101.9	67.7	91.7
0970, 0990	Wall Finishes & Painting/Coating	95.7	85.3	89.4	120.5	79.9	96.1	120.5	79.9	96.1	106.3	55.5	75.7
09	FINISHES	96.5	86.3	90.8	102.9	75.5	87.6	102.6	74.7	87.0	99.2	48.2	70.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	94.9	99.0	100.0	88.5	97.7	100.0	86.0	97.2	100.0	69.5	93.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.2	66.1	83.5	100.3	87.7	95.2	100.3	86.8	94.9	95.4	51.6	77.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.6	62.6	79.8	95.8	99.2	97.6	93.4	99.2	96.5	95.5	36.2	64.6
MF2010	WEIGHTED AVERAGE	97.9	79.7	90.0	99.8	85.4	93.5	100.6	84.7	93.6	98.1	55.6	79.6

City Cost Indexes

DIVISION		VIRGINIA														
		FAIRFAX			FARMVILLE			FREDERICKSBURG			GRUNDY			HARRISONBURG		
		220 - 221			239			224 - 225			246			228		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.8	100.8		105.1	105.1		100.8	100.8		100.8	100.8		100.8	100.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	122.4	87.3	97.8	107.2	87.2	93.2	110.8	87.2	94.2	105.6	84.4	90.7	119.4	85.9	95.9
0310	Concrete Forming & Accessories	86.8	72.8	74.7	100.4	44.6	52.3	86.8	70.8	73.0	91.5	37.2	44.6	82.9	43.5	48.9
0320	Concrete Reinforcing	95.9	87.0	91.5	94.7	51.5	73.1	96.7	86.9	91.8	94.6	52.0	73.3	95.9	66.9	81.5
0330	Cast-in-Place Concrete	104.6	81.3	94.9	106.8	54.1	85.0	106.2	64.7	89.0	104.1	48.1	80.9	104.6	58.8	85.6
03	CONCRETE	105.3	79.4	92.5	101.4	50.9	76.5	99.8	72.8	86.5	100.9	45.3	73.5	103.2	54.9	79.3
04	MASONRY	99.0	71.3	81.8	95.6	45.6	64.7	99.9	71.2	82.1	90.9	48.1	64.4	97.4	51.2	68.8
05	METALS	100.4	97.0	99.3	100.0	78.2	93.3	100.3	96.2	99.0	99.9	71.0	91.0	100.2	85.1	95.6
06	WOOD, PLASTICS & COMPOSITES	86.6	71.9	78.3	101.9	45.0	69.8	86.6	69.6	77.0	89.6	35.8	59.3	82.7	39.8	58.5
07	THERMAL & MOISTURE PROTECTION	105.0	73.9	92.4	105.3	50.2	83.0	104.5	79.1	94.2	104.7	46.1	80.9	104.9	64.5	88.5
08	OPENINGS	94.6	75.6	90.1	94.9	44.0	82.9	95.7	74.0	90.6	97.4	35.2	82.7	96.0	50.6	85.3
0920	Plaster & Gypsum Board	100.3	70.9	80.3	109.3	42.5	63.8	100.3	68.5	78.7	100.1	33.7	54.9	100.1	37.8	57.7
0950, 0980	Ceilings & Acoustic Treatment	95.1	70.9	79.0	92.5	42.5	59.2	95.1	68.5	77.4	94.2	33.7	53.9	94.2	37.8	56.7
0960	Flooring	102.2	82.7	95.4	108.6	61.4	94.5	102.2	82.7	96.4	103.2	34.3	82.6	100.3	75.3	92.9
0970, 0990	Wall Finishes & Painting/Coating	120.5	79.9	96.1	107.7	39.6	66.7	120.5	77.7	94.8	106.3	35.9	64.0	120.5	55.5	81.4
09	FINISHES	101.2	74.7	86.4	101.8	47.0	71.3	100.1	72.9	85.0	99.3	35.9	64.0	100.0	48.9	71.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	86.0	97.2	100.0	46.8	89.3	100.0	81.9	96.4	100.0	44.8	88.9	100.0	69.3	93.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.4	86.8	91.9	95.3	44.3	74.9	95.4	86.5	91.8	95.4	63.5	82.6	95.4	67.1	84.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.6	99.2	98.0	90.4	49.4	69.0	93.6	99.2	96.6	95.5	45.7	69.5	95.7	98.7	97.3
MF2010	WEIGHTED AVERAGE	99.3	84.4	92.8	97.8	53.3	78.5	98.2	83.0	91.6	98.0	53.4	78.6	98.8	68.1	85.5

DIVISION		VIRGINIA														
		NEWPORT NEWS			NORFOLK			PETERSBURG			PORTSMOUTH			PULASKI		
		239			233 - 235			239			237			243		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		105.1	105.1		105.7	105.7		105.1	105.1		105.0	105.0		100.8	100.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	106.2	88.4	93.7	105.7	89.4	94.3	109.7	88.6	94.9	104.7	88.2	93.1	104.9	85.1	91.0
0310	Concrete Forming & Accessories	99.7	65.4	70.1	99.5	65.6	70.2	93.0	58.3	63.1	88.9	54.2	58.9	91.5	39.5	46.6
0320	Concrete Reinforcing	94.4	72.8	83.6	99.5	72.8	86.2	94.1	73.2	83.6	94.1	72.8	83.4	94.6	66.7	80.7
0330	Cast-in-Place Concrete	103.8	66.8	88.5	111.9	66.9	93.2	110.3	54.2	87.0	102.8	66.7	87.8	104.1	48.9	81.2
03	CONCRETE	98.6	68.6	83.8	103.3	68.7	86.2	103.6	61.2	82.7	97.3	63.5	80.7	100.9	49.6	75.6
04	MASONRY	90.6	54.9	68.5	99.1	54.9	71.7	103.3	53.6	72.5	96.0	54.9	70.6	85.9	49.1	63.1
05	METALS	102.2	90.4	98.6	102.0	90.5	98.4	100.1	91.1	97.3	101.2	89.7	97.7	100.0	83.8	95.0
06	WOOD, PLASTICS & COMPOSITES	100.6	67.7	82.0	97.0	67.7	80.5	91.4	59.8	73.6	87.6	52.6	67.8	89.6	37.6	60.3
07	THERMAL & MOISTURE PROTECTION	105.3	69.7	90.8	101.9	69.7	88.8	105.3	69.6	90.8	105.3	67.0	89.7	104.7	51.0	82.9
08	OPENINGS	95.3	63.3	87.7	94.2	63.3	86.9	94.6	59.9	86.4	95.4	55.0	85.8	97.5	43.2	84.6
0920	Plaster & Gypsum Board	110.2	65.8	80.0	106.3	65.8	78.8	101.7	57.7	71.8	102.0	50.2	66.8	100.1	35.5	56.1
0950, 0980	Ceilings & Acoustic Treatment	96.1	65.8	75.9	97.7	65.8	76.5	93.4	57.7	69.7	96.1	50.2	65.6	94.2	35.5	55.1
0960	Flooring	108.6	67.7	95.4	103.5	67.7	92.8	104.7	72.5	95.1	101.7	67.7	91.5	103.2	67.7	92.6
0970, 0990	Wall Finishes & Painting/Coating	107.7	42.9	68.8	105.8	77.7	88.9	107.7	77.7	89.7	107.7	77.7	89.7	106.3	55.5	75.7
09	FINISHES	102.5	63.5	80.8	100.7	67.4	82.2	100.1	62.5	79.1	99.5	57.9	76.3	99.3	44.7	68.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	75.4	95.1	100.0	75.4	95.1	100.0	78.2	95.6	100.0	73.7	94.7	100.0	45.0	89.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	64.1	85.7	100.0	64.7	85.8	95.3	66.9	83.9	100.2	64.7	86.0	95.4	63.4	82.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.1	60.3	76.0	96.9	59.7	77.4	93.3	70.8	81.5	91.4	59.7	74.9	95.5	55.7	74.7
MF2010	WEIGHTED AVERAGE	99.2	68.2	85.7	100.0	68.8	86.4	98.6	68.9	85.6	98.6	66.1	84.5	97.7	58.3	80.6

DIVISION		VIRGINIA									WASHINGTON					
		ROANOKE			STAUNTON			WINCHESTER			CLARKSTON			EVERETT		
		240 - 241			244			226			994			982		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.8	100.8		105.1	105.1		100.8	100.8		90.4	90.4		102.1	102.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.2	85.9	91.7	109.1	87.3	93.8	118.1	87.2	96.4	97.1	90.0	92.1	89.4	110.3	104.1
0310	Concrete Forming & Accessories	97.9	61.8	66.8	91.1	51.1	56.6	85.2	70.8	72.8	114.8	68.8	75.1	114.9	99.6	101.7
0320	Concrete Reinforcing	95.6	67.4	81.5	95.3	50.5	72.9	95.3	86.3	90.8	105.7	87.4	96.6	110.2	100.2	105.2
0330	Cast-in-Place Concrete	118.3	58.5	93.5	108.3	52.0	84.9	104.6	64.7	88.1	97.0	83.2	91.3	99.8	103.8	101.5
03	CONCRETE	105.5	63.1	84.6	102.3	53.0	78.0	102.6	72.7	87.9	110.7	77.4	94.3	98.7	100.7	99.7
04	MASONRY	92.1	54.1	68.6	100.6	52.3	70.7	95.1	60.0	73.3	97.2	80.7	87.0	111.9	99.0	103.9
05	METALS	102.2	86.5	97.4	100.2	81.7	94.5	100.3	94.8	98.6	88.1	81.2	86.0	104.3	91.7	100.4
06	WOOD, PLASTICS & COMPOSITES	99.0	64.0	79.3	89.6	51.0	67.8	85.1	69.6	76.4	103.3	65.2	81.8	112.1	99.3	104.9
07	THERMAL & MOISTURE PROTECTION	104.3	67.2	89.3	104.3	53.0	83.5	105.0	76.2	93.3	142.7	76.9	116.0	100.5	100.5	100.5
08	OPENINGS	96.4	59.4	87.6	96.0	49.2	84.9	97.5	74.7	92.1	106.7	69.7	98.0	101.9	99.8	101.4
0920	Plaster & Gypsum Board	108.4	62.7	77.3	100.1	48.6	65.1	100.3	68.5	78.7	130.6	64.0	85.3	110.7	99.2	102.9
0950, 0980	Ceilings & Acoustic Treatment	97.7	62.7	74.5	94.2	48.6	63.9	95.1	68.5	77.4	97.9	64.0	75.3	99.9	99.2	99.5
0960	Flooring	106.7	67.7	95.0	102.7	40.2	84.0	101.6	82.7	96.0	98.3	48.0	83.2	117.9	93.3	110.6
0970, 0990	Wall Finishes & Painting/Coating	106.3	55.5	75.7	106.3	35.3	63.6	120.5	89.1	101.6	106.4	59.8	78.4	104.8	90.1	96.0
09	FINISHES	101.8	62.4	79.8	99.2	47.6	70.4	100.5	74.2	85.9	114.8	62.6	85.7	109.0	97.1	102.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	72.7	94.5	100.0	72.6	94.5	100.0	85.7	97.1	100.0	77.3	95.5	100.0	99.6	99.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.3	65.8	86.5	95.4	60.1	81.2	95.4	86.8	91.9	95.4	84.7	91.1	100.1	100.3	100.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.5	55.7	74.7	94.3	74.6	84.0	94.1	99.2	96.8	94.9	94.4	94.6	103.0	98.5	100.7
MF2010	WEIGHTED AVERAGE	100.2	66.0	85.3	98.4	62.7	82.9	98.7	82.1	91.5	100.6	80.7	92.0	102.1	99.6	101.0

City Cost Indexes

DIVISION		WASHINGTON											
		RICHLAND			SEATTLE			SPOKANE			TACOMA		
		993			980 - 981,987			990 - 992			983 - 984		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	90.4	90.4		102.0	102.0		90.4	90.4		102.1	102.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.6	90.8	93.4	94.5	108.6	104.4	98.7	90.8	93.2	92.4	110.4	105.0
0310	Concrete Forming & Accessories	114.9	78.4	83.4	106.9	100.3	101.2	119.8	78.0	83.7	105.5	99.8	100.6
0320	Concrete Reinforcing	101.4	87.6	94.5	112.2	100.3	106.3	102.1	87.6	94.9	109.0	100.2	104.6
0330	Cast-in-Place Concrete	97.2	85.5	92.4	103.6	105.6	104.5	101.0	85.3	94.5	102.6	105.4	103.8
03	CONCRETE	110.3	82.6	96.6	102.0	101.7	101.8	112.6	82.3	97.6	100.5	101.3	100.9
04	MASONRY	99.3	83.2	89.3	109.2	99.9	103.4	99.9	83.8	89.9	106.7	99.9	102.5
05	METALS	88.5	84.1	87.1	104.5	93.4	101.1	90.8	83.7	88.6	106.0	91.6	101.6
06	WOOD, PLASTICS & COMPOSITES	103.4	75.7	87.8	102.2	99.3	100.6	112.1	75.7	91.6	101.3	99.3	100.2
07	THERMAL & MOISTURE PROTECTION	144.1	79.7	117.9	97.6	100.9	99.0	140.6	79.1	115.6	100.2	98.7	99.6
08	OPENINGS	109.2	71.2	100.2	105.2	99.8	103.9	109.7	71.7	100.7	102.7	99.8	102.0
0920	Plaster & Gypsum Board	130.6	74.8	92.6	106.9	99.2	101.7	121.5	74.8	89.7	111.5	99.2	103.1
0950, 0980	Ceilings & Acoustic Treatment	104.8	74.8	84.8	101.8	99.2	100.1	99.8	74.8	83.2	103.5	99.2	100.6
0960	Flooring	98.7	81.6	93.5	110.9	101.0	108.0	98.2	86.9	94.8	111.4	93.4	106.0
0970, 0990	Wall Finishes & Painting/Coating	106.4	66.2	82.2	104.2	90.1	95.7	106.6	72.4	86.0	104.8	90.1	96.0
09	FINISHES	116.6	76.7	94.4	108.1	98.9	102.9	114.3	78.5	94.3	108.2	97.4	102.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	87.2	97.4	100.0	100.1	100.0	100.0	87.1	97.4	100.0	100.1	100.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.3	109.7	104.1	100.0	117.1	106.8	100.2	85.9	94.5	100.1	100.8	100.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.1	94.4	93.3	102.4	107.0	104.8	90.5	79.1	84.5	102.8	99.7	101.2
MF2010	WEIGHTED AVERAGE	102.2	89.6	96.7	102.5	104.8	103.5	102.5	82.7	93.8	102.3	100.0	101.3

DIVISION		WEST VIRGINIA											
		YAKIMA			BECKLEY			BLUEFIELD			BUCKHANNON		
		989			258 - 259			247 - 248			262		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	102.1	102.1		100.8	100.8		100.8	100.8		100.8	100.8	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	94.7	109.8	105.3	97.9	89.2	91.8	99.6	89.2	92.3	105.8	89.2	94.1
0310	Concrete Forming & Accessories	106.0	95.3	96.8	86.3	92.0	91.2	88.3	91.9	91.4	87.7	92.2	91.6
0320	Concrete Reinforcing	109.5	88.8	99.2	92.3	89.4	90.9	94.2	84.9	89.6	94.8	85.0	89.9
0330	Cast-in-Place Concrete	109.6	84.4	99.2	102.0	102.1	102.0	101.9	102.1	102.0	101.6	100.3	101.0
03	CONCRETE	105.1	90.0	97.7	96.5	95.5	96.0	96.9	94.7	95.8	99.7	94.2	97.0
04	MASONRY	100.4	81.6	88.8	90.8	93.4	92.4	87.5	93.4	91.1	97.4	92.3	94.2
05	METALS	104.2	85.7	98.5	101.2	98.2	100.3	100.2	96.5	99.1	100.4	97.3	99.4
06	WOOD, PLASTICS & COMPOSITES	101.7	99.3	100.4	85.1	92.8	89.4	88.6	92.8	91.0	87.9	92.8	90.6
07	THERMAL & MOISTURE PROTECTION	100.3	81.6	92.7	107.1	89.4	99.9	104.4	89.4	98.4	104.7	90.0	98.7
08	OPENINGS	102.2	81.0	97.2	96.1	85.0	93.5	97.9	83.9	94.6	97.9	83.9	94.6
0920	Plaster & Gypsum Board	111.1	99.2	103.0	93.3	92.4	92.7	99.3	92.4	94.6	99.7	92.4	94.7
0950, 0980	Ceilings & Acoustic Treatment	97.3	99.2	98.6	93.4	92.4	92.7	92.4	92.4	92.4	94.2	92.4	93.0
0960	Flooring	112.4	59.1	96.4	100.5	114.1	104.6	99.8	114.1	104.1	99.5	114.1	103.9
0970, 0990	Wall Finishes & Painting/Coating	104.8	72.4	85.3	107.1	93.5	98.9	106.3	93.5	98.6	106.3	93.8	98.8
09	FINISHES	107.2	86.5	95.7	97.8	96.9	97.3	97.5	96.9	97.2	98.4	96.7	97.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.3	99.5	100.0	56.6	91.3	100.0	56.6	91.3	100.0	96.7	99.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	109.1	103.7	95.5	91.5	93.9	95.4	91.5	93.8	95.4	92.3	94.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	105.9	94.4	99.9	91.2	91.9	91.6	94.4	91.9	93.1	95.8	96.8	96.3
MF2010	WEIGHTED AVERAGE	102.5	94.4	99.0	96.9	92.0	94.8	97.1	91.7	94.7	98.2	93.6	96.2

DIVISION		WEST VIRGINIA											
		GASSAWAY			HUNTINGTON			LEWISBURG			MARTINSBURG		
		266			255 - 257			249			254		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.8	100.8		100.8	100.8		100.8	100.8		100.8	100.8	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.2	89.2	93.3	102.4	90.4	94.0	115.3	89.2	97.0	101.4	89.7	93.2
0310	Concrete Forming & Accessories	87.2	92.2	91.5	98.2	96.0	96.3	85.6	91.8	91.0	86.3	82.4	83.0
0320	Concrete Reinforcing	94.8	85.0	89.9	93.7	90.6	92.2	94.8	84.9	89.9	92.3	83.0	87.6
0330	Cast-in-Place Concrete	106.3	101.0	104.1	111.1	103.5	108.0	101.9	102.1	102.0	106.8	96.0	102.3
03	CONCRETE	100.2	94.4	97.3	101.8	98.0	99.9	105.8	94.6	100.3	99.9	88.0	94.1
04	MASONRY	101.5	92.3	95.8	89.8	99.9	96.0	90.3	93.4	92.2	91.7	85.6	87.9
05	METALS	100.3	97.2	99.4	103.6	99.5	102.3	100.3	96.5	99.1	101.6	94.9	99.5
06	WOOD, PLASTICS & COMPOSITES	87.0	92.8	90.2	97.2	95.4	96.2	84.7	92.8	89.3	85.1	81.3	82.9
07	THERMAL & MOISTURE PROTECTION	104.4	90.0	98.6	107.3	91.4	100.8	105.2	89.4	98.8	107.4	78.2	95.5
08	OPENINGS	96.1	83.9	93.2	95.4	86.6	93.4	97.9	83.9	94.6	98.1	73.9	92.4
0920	Plaster & Gypsum Board	99.0	92.4	94.5	102.1	95.1	97.4	97.5	92.4	94.0	93.9	80.5	84.8
0950, 0980	Ceilings & Acoustic Treatment	94.2	92.4	93.0	96.1	95.1	95.4	94.2	92.4	93.0	96.1	80.5	85.7
0960	Flooring	99.3	114.1	103.8	107.9	120.3	111.6	98.7	114.1	103.3	100.5	114.1	104.6
0970, 0990	Wall Finishes & Painting/Coating	106.3	93.5	98.6	107.1	93.5	98.9	106.3	77.0	88.7	107.1	42.2	68.1
09	FINISHES	97.9	96.6	97.2	101.7	100.5	101.0	98.8	95.1	96.7	98.7	82.3	89.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	96.7	99.3	100.0	98.6	99.7	100.0	56.6	91.3	100.0	95.4	99.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.4	91.4	93.8	100.4	89.3	95.9	95.4	91.5	93.8	95.5	86.7	91.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.8	91.9	93.8	94.9	96.1	95.5	91.8	91.9	91.8	96.9	82.8	89.6
MF2010	WEIGHTED AVERAGE	98.2	92.8	95.8	99.8	95.2	97.8	98.4	91.4	95.4	98.3	86.1	93.0

City Cost Indexes

DIVISION		WEST VIRGINIA									WISCONSIN								
		PETERSBURG			ROMNEY			WHEELING			BELOIT			EAU CLAIRE			GREEN BAY		
		267			267			267			539			547			541 - 543		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.8	100.8		100.8	100.8		100.8	100.8		102.6	102.6		101.2	101.2		99.0	99.0	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.9	89.8	92.8	102.6	89.8	93.6	109.5	89.9	95.7	95.8	108.6	104.8	94.6	103.6	100.9	98.2	99.6	99.2
0310	Concrete Forming & Accessories	88.7	91.6	91.2	84.8	91.6	90.7	91.5	92.6	92.4	100.1	102.1	101.9	99.7	101.3	101.1	107.8	100.5	101.5
0320	Concrete Reinforcing	94.2	84.9	89.6	94.8	76.3	85.6	93.6	84.3	89.0	96.6	117.1	106.9	93.7	100.9	97.3	91.9	93.2	92.6
0330	Cast-in-Place Concrete	101.5	96.3	99.4	106.3	96.3	102.1	103.8	100.9	102.6	103.7	101.9	102.9	102.1	99.5	101.0	105.6	100.9	103.7
03	CONCRETE	96.8	92.5	94.7	100.0	91.0	95.5	101.6	94.4	98.1	99.9	104.9	102.3	98.8	100.7	99.7	101.9	99.5	100.7
04	MASONRY	92.9	92.3	92.5	90.7	92.3	91.7	100.2	91.7	94.9	98.5	104.8	102.4	89.8	102.7	97.8	120.3	101.9	108.9
05	METALS	100.5	96.6	99.3	100.5	93.7	98.4	101.2	96.9	99.9	94.2	108.4	98.6	93.1	102.7	96.0	95.4	99.1	96.5
06	WOOD, PLASTICS & COMPOSITES	88.9	92.8	91.1	83.8	92.8	88.9	89.6	92.8	91.4	98.2	101.6	100.1	105.2	101.6	103.2	110.0	101.6	105.3
07	THERMAL & MOISTURE PROTECTION	104.5	84.5	96.4	104.6	81.2	95.1	104.7	89.5	98.5	103.4	97.9	101.2	103.2	88.1	97.1	105.0	87.1	97.7
08	OPENINGS	99.1	83.9	95.5	99.0	82.0	95.0	97.6	85.1	94.7	103.6	110.2	105.1	101.0	98.1	100.3	97.4	97.8	97.5
0920	Plaster & Gypsum Board	99.7	92.4	94.7	97.1	92.4	93.9	100.1	92.4	94.8	92.8	101.9	99.0	101.4	101.9	101.8	96.6	101.9	100.2
0950, 0980	Ceilings & Acoustic Treatment	94.2	92.4	93.0	94.2	92.4	93.0	94.2	92.4	93.0	92.5	101.9	98.8	101.7	101.9	101.9	92.7	101.9	98.9
0960	Flooring	100.3	114.1	104.5	98.5	114.1	103.2	103.2	114.1	106.4	101.9	120.3	107.4	94.2	116.2	100.8	113.3	116.2	114.2
0970, 0990	Wall Finishes & Painting/Coating	106.3	93.8	98.8	106.3	93.8	98.8	106.3	93.8	98.8	91.8	99.3	96.3	88.0	88.3	88.2	98.1	85.0	90.2
09	FINISHES	98.1	96.7	97.3	97.4	96.7	97.0	99.5	96.9	98.1	99.7	105.1	102.7	99.2	103.2	101.4	103.3	102.6	102.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	65.3	93.1	100.0	96.7	99.3	100.0	97.1	99.4	100.0	98.2	99.6	100.0	98.5	99.7	100.0	98.1	99.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.4	91.2	93.7	95.4	90.8	93.6	100.3	92.8	97.3	100.0	100.0	100.0	100.1	87.5	95.1	100.4	84.3	93.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.2	82.9	90.7	98.5	82.9	90.3	93.1	96.8	95.0	102.8	87.3	94.7	103.9	86.9	95.0	98.2	82.9	90.2
MF2010	WEIGHTED AVERAGE	98.0	90.1	94.6	98.2	90.4	94.8	99.8	93.8	97.2	99.6	101.9	100.6	98.7	96.4	97.7	100.5	94.1	97.7

DIVISION		WISCONSIN																	
		KENOSHA			LA CROSSE			LANCASTER			MADISON			MILWAUKEE			NEW RICHMOND		
		531			546			539			537			530,532			540		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	100.5	100.5		101.2	101.2		102.6	102.6		102.6	102.6		99.8	99.8		101.6	101.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.8	105.5	104.4	88.5	103.6	99.1	95.0	108.5	104.4	91.3	108.6	103.4	98.0	98.7	98.5	91.7	104.0	100.3
0310	Concrete Forming & Accessories	106.8	102.5	103.1	86.7	100.8	98.9	99.5	99.7	99.7	103.7	101.7	102.0	102.2	120.1	117.6	95.2	102.8	101.8
0320	Concrete Reinforcing	96.4	98.6	97.5	93.4	92.9	93.1	97.9	92.8	95.4	102.3	93.1	97.7	100.5	98.9	99.7	91.0	100.7	95.9
0330	Cast-in-Place Concrete	112.8	106.0	109.9	91.8	97.0	94.0	103.0	101.0	102.2	94.3	101.8	97.4	102.3	110.6	105.7	106.3	83.6	96.9
03	CONCRETE	104.6	103.0	103.8	90.1	98.1	94.1	99.6	98.9	99.2	97.1	100.1	98.6	100.3	111.9	106.0	96.6	95.9	96.3
04	MASONRY	95.9	115.5	108.1	89.0	102.7	97.5	98.6	104.9	102.5	99.4	104.8	102.8	102.2	120.5	113.5	115.4	102.8	107.6
05	METALS	95.0	101.6	97.0	93.0	98.9	94.8	91.8	96.1	93.1	93.5	98.1	94.9	98.1	94.9	97.1	93.2	101.5	95.8
06	WOOD, PLASTICS & COMPOSITES	101.8	98.7	100.1	90.2	101.6	96.7	97.5	101.6	99.8	97.0	101.6	99.6	101.1	121.3	112.5	94.0	104.9	100.2
07	THERMAL & MOISTURE PROTECTION	103.4	108.4	105.4	102.7	87.2	96.4	103.1	83.5	95.2	106.5	94.0	101.4	99.9	113.0	105.2	104.9	93.8	100.4
08	OPENINGS	97.6	102.8	98.9	101.0	86.7	97.6	99.2	87.5	96.4	105.1	101.6	104.3	106.2	115.1	108.3	86.9	99.9	90.0
0920	Plaster & Gypsum Board	83.2	99.0	93.9	95.9	101.9	100.0	91.5	101.9	98.6	94.2	101.9	99.5	99.9	122.1	115.0	85.5	105.5	99.1
0950, 0980	Ceilings & Acoustic Treatment	92.5	99.0	96.8	100.8	101.9	101.6	87.2	101.9	97.0	102.4	101.9	102.1	96.1	122.1	113.4	65.8	105.5	92.2
0960	Flooring	120.9	112.4	118.4	88.3	116.2	96.7	101.6	112.6	104.9	103.5	112.6	106.2	101.6	116.1	105.9	106.5	116.2	109.4
0970, 0990	Wall Finishes & Painting/Coating	101.5	115.2	109.7	88.0	75.5	80.5	91.8	67.8	77.4	89.8	99.3	95.5	93.2	125.6	112.7	101.0	88.3	93.4
09	FINISHES	104.6	105.5	105.1	96.1	101.8	99.3	98.3	98.4	98.3	101.0	103.9	102.6	102.5	121.0	112.8	93.7	103.3	99.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	101.6	100.3	100.0	98.5	99.7	100.0	50.6	90.1	100.0	98.2	99.6	100.0	104.8	101.0	100.0	98.4	99.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	96.9	98.9	100.1	87.4	95.0	95.1	87.2	92.0	100.0	96.3	98.5	100.0	102.5	101.0	94.8	86.8	91.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	103.4	99.6	101.4	104.2	87.1	95.3	102.6	87.1	94.5	103.6	94.3	98.8	102.9	101.9	102.4	102.0	87.1	94.3
MF2010	WEIGHTED AVERAGE	100.2	102.9	101.4	97.2	95.0	96.3	97.4	93.5	95.7	99.5	99.8	99.6	100.9	107.9	104.0	96.2	95.9	96.1

DIVISION		WISCONSIN																	
		OSHKOSH			PORTAGE			RACINE			RHINELANDER			SUPERIOR			WAUSAU		
		549			539			537			546			548			544		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	99.0	99.0		102.6	102.6		102.6	102.6		99.0	99.0		101.6	101.6		99.0	99.0	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.0	99.6	96.7	85.8	108.4	101.6	95.6	109.3	105.2	102.1	99.6	100.3	88.6	104.0	99.4	85.9	99.6	95.5
0310	Concrete Forming & Accessories	91.0	99.9	98.7	92.1	100.7	99.5	100.4	102.5	102.2	88.4	99.9	98.3	93.4	94.0	94.0	90.3	100.5	99.1
0320	Concrete Reinforcing	92.0	93.1	92.6	98.0	93.0	95.5	96.6	98.6	97.6	92.2	92.2	92.2	91.0	92.7	91.8	92.2	92.9	92.5
0330	Cast-in-Place Concrete	97.9	100.8	99.1	88.5	103.0	94.5	101.7	105.7	103.3	111.0	101.0	106.9	100.1	100.0	100.1	91.3	100.9	95.3
03	CONCRETE	91.7	99.1	95.3	87.5	100.1	93.7	98.9	102.9	100.9	103.6	99.0	101.3	91.2	96.1	93.6	86.8	99.4	93.0
04	MASONRY	102.5	102.2	102.3	97.5	104.8	102.1	98.6	115.5	109.0	118.7	102.7	108.8	114.7	106.3	109.5	102.1	101.9	102.0
05	METALS	93.4	98.4	94.9	92.5	97.1	93.9	95.9	101.5	97.6	93.3	97.8	94.7	94.1	99.4	95.7	93.2	98.9	94.9
06	WOOD, PLASTICS & COMPOSITES	89.8	101.6	96.5	88.4	101.6	95												

City Cost Indexes

DIVISION		WYOMING														
		CASPER			CHEYENNE			NEWCASTLE			RAWLINS			RIVERTON		
		828			822			827			823			825		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	97.9	97.9		97.9	97.9		97.9	97.9		97.9	97.9		97.9	97.9	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.2	95.2	95.8	90.1	95.2	93.7	82.0	94.8	91.0	95.8	94.8	95.1	89.3	94.8	93.2
0310	Concrete Forming & Accessories	104.4	43.5	51.9	106.6	54.7	61.8	97.1	63.5	68.1	101.3	63.5	68.6	96.0	63.0	67.5
0320	Concrete Reinforcing	108.6	70.5	89.6	100.8	71.3	86.1	108.4	71.7	90.1	108.1	71.7	89.9	109.1	71.4	90.2
0330	Cast-in-Place Concrete	98.6	72.6	87.8	91.1	72.7	83.5	92.0	62.1	79.6	92.1	62.1	79.6	92.0	52.6	75.7
03	CONCRETE	103.0	59.4	81.5	100.1	64.6	82.6	100.6	64.8	82.9	114.3	64.8	89.9	108.9	61.3	85.4
04	MASONRY	100.0	34.5	59.5	95.8	47.6	65.9	92.6	55.7	69.7	92.6	55.7	69.7	92.6	49.9	66.1
05	METALS	98.1	71.0	89.7	101.5	72.4	92.5	96.6	72.4	89.2	96.7	72.4	89.2	96.8	71.6	89.0
06	WOOD, PLASTICS & COMPOSITES	96.3	41.0	65.1	95.6	55.6	73.0	85.6	68.4	75.9	89.6	68.4	77.6	84.5	68.4	75.5
07	THERMAL & MOISTURE PROTECTION	105.2	49.4	82.5	99.7	54.4	81.3	101.2	55.9	82.8	102.7	55.9	83.7	102.1	59.7	84.9
08	OPENINGS	102.1	48.9	89.5	102.3	56.9	91.6	106.2	60.8	95.5	105.9	60.8	95.2	106.1	60.8	95.3
0920	Plaster & Gypsum Board	93.1	39.1	56.3	84.6	54.2	63.9	80.3	67.4	71.5	80.7	67.4	71.6	80.3	67.4	71.5
0950, 0980	Ceilings & Acoustic Treatment	108.9	39.1	62.4	100.3	54.2	69.6	102.3	67.4	79.0	102.3	67.4	79.0	102.3	67.4	79.0
0960	Flooring	109.6	33.6	86.8	107.4	54.0	91.5	101.0	52.6	86.5	103.8	52.6	88.5	100.6	52.6	86.2
0970, 0990	Wall Finishes & Painting/Coating	100.0	44.0	66.3	106.9	44.0	69.1	102.6	56.6	74.9	102.6	56.6	74.9	102.6	56.6	74.9
09	FINISHES	106.4	40.1	69.5	103.2	52.8	75.1	97.9	60.6	77.1	100.2	60.6	78.2	98.7	60.6	77.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	88.9	97.8	100.0	90.6	98.1	100.0	91.5	98.3	100.0	91.5	98.3	100.0	58.0	91.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	65.4	86.1	100.0	65.5	86.2	97.5	64.8	84.3	97.5	64.8	84.3	97.5	64.7	84.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.0	65.6	80.1	99.1	70.2	84.0	96.8	70.6	83.2	96.8	70.6	83.2	96.8	64.4	79.9
MF2010	WEIGHTED AVERAGE	100.4	60.7	83.1	100.1	65.7	85.2	98.2	67.8	84.9	100.2	67.8	86.1	99.3	64.9	84.3

DIVISION		WYOMING									CANADA					
		SHERIDAN			WHEATLAND			WORLAND			YELLOWSTONE NAT'L PA			BARRIE, ONTARIO		
		828			822			824			821					
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	97.9	97.9		97.9	97.9		97.9	97.9		97.9	97.9		101.6	101.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	89.8	95.2	93.6	86.4	94.8	92.3	83.9	94.7	91.5	84.0	94.9	91.7	115.3	101.0	105.3
0310	Concrete Forming & Accessories	104.3	51.6	58.8	99.1	51.1	57.7	99.2	62.7	67.7	99.2	64.0	68.8	125.1	91.5	96.1
0320	Concrete Reinforcing	109.1	71.8	90.4	108.4	71.7	90.1	109.1	71.1	90.1	111.0	71.1	91.1	174.2	86.5	130.4
0330	Cast-in-Place Concrete	95.1	72.7	85.8	96.0	61.8	81.8	92.0	52.2	75.5	92.0	54.2	76.3	166.0	90.4	134.6
03	CONCRETE	108.8	63.3	86.3	105.4	59.2	82.6	100.8	61.0	81.2	101.1	62.3	81.9	151.0	90.3	121.1
04	MASONRY	92.8	57.2	70.8	92.9	55.2	69.6	92.6	44.9	63.1	92.6	48.5	65.3	165.2	99.8	124.7
05	METALS	100.3	72.9	91.9	96.6	72.2	89.1	96.8	71.2	88.9	97.4	71.2	89.3	108.2	91.4	103.0
06	WOOD, PLASTICS & COMPOSITES	97.0	51.6	71.4	87.5	52.1	67.5	87.5	68.4	76.8	87.5	68.4	76.8	120.6	90.1	103.4
07	THERMAL & MOISTURE PROTECTION	102.4	56.5	83.7	101.5	55.0	82.6	101.3	56.0	82.9	100.8	57.5	83.2	112.4	91.0	103.7
08	OPENINGS	106.8	52.5	93.9	104.8	54.7	93.0	106.4	60.8	95.6	99.8	60.8	90.6	92.5	88.6	91.5
0920	Plaster & Gypsum Board	105.6	50.0	67.8	80.3	50.5	60.0	80.3	67.4	71.5	80.5	67.4	71.6	151.2	89.8	109.4
0950, 0980	Ceilings & Acoustic Treatment	105.2	50.0	68.5	102.3	50.5	67.8	102.3	67.4	79.0	103.1	67.4	79.3	95.2	89.8	91.6
0960	Flooring	105.0	52.6	89.3	102.5	51.7	87.3	102.5	52.6	87.6	102.5	52.6	87.6	130.7	100.7	121.7
0970, 0990	Wall Finishes & Painting/Coating	105.1	44.0	68.4	102.6	35.2	62.1	102.6	56.6	74.9	102.6	56.6	74.9	111.9	91.8	99.8
09	FINISHES	106.2	49.7	74.7	98.6	48.3	70.6	98.3	60.5	77.2	98.5	61.4	77.8	117.3	93.5	104.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	90.1	98.0	100.0	82.0	96.4	100.0	57.8	91.5	100.0	59.0	91.8	139.2	76.2	126.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.5	65.5	84.6	97.5	64.5	84.2	97.5	64.4	84.2	97.5	66.2	84.9	102.2	101.5	101.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.5	64.5	81.2	96.8	70.2	82.9	96.8	64.4	79.9	95.7	64.4	79.4	116.5	92.6	104.0
MF2010	WEIGHTED AVERAGE	100.9	65.2	85.4	98.7	64.6	83.9	98.3	64.1	83.4	97.7	65.2	83.5	117.3	94.9	107.5

DIVISION		CANADA														
		BRANDON, MANITOBA			BRANTFORD, ONTARIO			BRIDGEWATER, NOVA SCOTIA			CALGARY, ALBERTA			CAP-DE-LA-MADELEINE, QUEBEC		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT	103.9	103.9		101.6	101.6		101.6	101.6		106.4	106.4		102.5	102.5	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	117.9	99.9	105.3	114.9	101.3	105.4	99.9	98.9	99.2	124.6	105.7	111.3	95.9	100.6	99.2
0310	Concrete Forming & Accessories	126.8	74.1	81.3	124.9	99.1	102.6	97.1	73.2	76.5	127.7	96.8	101.0	130.3	90.0	95.5
0320	Concrete Reinforcing	189.5	54.9	122.3	167.9	85.2	126.6	142.9	48.2	95.6	130.9	74.1	102.5	142.9	81.4	112.2
0330	Cast-in-Place Concrete	146.1	77.7	117.7	162.0	112.0	141.3	166.5	73.2	127.8	201.5	106.2	162.0	130.8	99.3	117.7
03	CONCRETE	138.9	72.4	106.1	147.1	100.9	124.3	144.7	69.3	107.5	167.1	95.9	132.0	128.7	91.7	110.5
04	MASONRY	186.5	68.8	113.7	167.9	104.4	128.6	163.2	73.2	107.5	203.4	90.7	133.7	163.7	88.6	117.2
05	METALS	117.8	77.8	105.5	105.5	92.2	101.4	104.6	75.3	95.6	130.4	89.2	117.7	103.8	88.8	99.2
06	WOOD, PLASTICS & COMPOSITES	124.4	75.1	96.6	119.8	97.9	107.4	89.2	72.6	79.9	107.8	96.5	101.4	131.6	89.9	108.1
07	THERMAL & MOISTURE PROTECTION	109.1	73.3	94.6	112.6	96.6	106.1	107.5	71.4	92.9	121.9	94.1	110.6	106.2	91.8	100.3
08	OPENINGS	97.0	66.3	89.7	93.6	94.9	93.9	86.6	66.4	81.8	94.2	86.1	92.3	94.7	83.0	91.9
0920	Plaster & Gypsum Board	129.5	73.9	91.7	142.7	97.8	112.1	141.8	71.7	94.1	140.9	95.9	110.3	172.3	89.4	115.9
0950, 0980	Ceilings & Acoustic Treatment	102.5	73.9	83.5	97.4	97.8	97.6	97.4	71.7	80.3	145.9	95.9	112.6	97.4	89.4	92.1
0960	Flooring	136.3	71.5	116.9	130.5	100.7	121.6	113.1	68.5	99.8	133.3	94.3	121.7	130.5	101.4	121.8
0970, 0990	Wall Finishes & Painting/Coating	113.1	60.0	81.2	109.0	100.8	104.1	109.0	65.5	82.9	114.2	112.4	113.1	109.0	93.7	99.8
09	FINISHES	118.8	72.5	93.0	115.6	100.1	107.0	109.9	71.8	88.7	129.1	98.5	112.0	118.9	92.8	104.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	69.1	118.7	131.1	78.4	120.6	131.1	68.2	118.5	131.1	98.4	124.6	131.1	87.3	122.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	102.5	85.9	95.9	102.5	104.5	103.3	102.5	86.3	96.0	101.3	92.2	97.6	102.9	93.0	98.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	120.0	71.3	94.6	112.9	92.1	102.0	118.7	65.9	91.1	114.2	100.8	107.2	112.6	74.3	92.6
MF2010	WEIGHTED AVERAGE	118.7	77.3	100.7	115.5	98.8	108.2	113.4	76.1	97.2	124.7	95.4	111.9	112.8	89.4	102.6

City Cost Indexes

DIVISION		CANADA																	
		CHARLOTTETOWN, PRINCE EDWARD ISLAND			CHICOUTIMI, QUEBEC			CORNER BROOK, NEWFOUNDLAND			CORNWALL, ONTARIO			DALHOUSIE, NEW BRUNSWICK			DARTMOUTH, NOVA SCOTIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		101.9	101.9		102.5	102.5		103.1	103.1		101.9	101.9		101.9	101.9		101.5	101.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	115.8	96.4	102.2	96.1	99.7	98.6	120.7	97.9	104.7	113.0	100.8	104.5	97.6	97.3	97.4	111.0	98.9	102.5
0310	Concrete Forming & Accessories	105.6	59.5	65.8	131.4	92.8	98.1	106.9	63.0	69.0	122.8	91.6	95.9	103.2	65.3	70.5	98.9	73.2	76.8
0320	Concrete Reinforcing	146.3	48.3	97.3	105.0	96.4	100.7	173.8	50.1	112.0	167.9	84.9	126.5	144.1	58.4	101.3	181.7	48.2	115.0
0330	Cast-in-Place Concrete	164.6	62.0	122.0	128.2	99.2	116.1	170.1	71.7	129.2	145.7	102.2	127.7	137.6	62.8	106.6	164.2	73.2	126.4
03	CONCRETE	153.1	59.1	106.7	120.1	95.6	108.0	167.6	64.5	116.8	139.3	94.1	117.0	135.2	63.8	100.0	152.9	69.3	111.6
04	MASONRY	182.6	63.7	109.0	167.4	94.1	122.0	183.2	65.3	110.2	166.7	95.7	122.7	158.4	66.1	101.3	196.5	73.2	120.2
05	METALS	127.0	68.6	108.9	104.2	92.3	100.6	118.3	74.0	104.6	105.5	90.8	101.0	101.7	72.8	92.8	118.3	75.3	105.0
06	WOOD, PLASTICS & COMPOSITES	88.5	59.1	71.9	132.6	93.2	110.4	104.3	62.1	80.5	118.6	91.0	103.0	97.7	65.4	79.5	94.6	72.6	82.2
07	THERMAL & MOISTURE PROTECTION	119.5	61.7	96.1	105.0	95.9	101.3	112.7	63.2	92.6	112.4	91.1	103.8	110.8	63.6	91.6	110.4	71.4	94.6
08	OPENINGS	93.4	51.1	83.4	93.8	80.5	90.6	102.9	58.5	92.4	94.7	88.2	93.1	90.3	57.2	82.4	88.3	66.4	83.1
0920	Plaster & Gypsum Board	144.0	57.7	85.3	176.1	92.8	119.4	160.5	60.8	92.7	208.0	90.7	128.2	148.2	64.2	91.1	156.0	71.7	98.6
0950, 0980	Ceilings & Acoustic Treatment	121.3	57.7	79.0	100.1	92.8	95.2	103.4	60.8	75.0	100.9	90.7	94.1	100.2	64.2	76.3	110.5	71.7	84.7
0960	Flooring	116.1	64.0	100.5	132.3	101.4	123.0	122.1	58.3	103.0	130.5	99.2	121.1	116.3	73.4	103.5	118.0	68.5	103.2
0970, 0990	Wall Finishes & Painting/Coating	112.9	43.9	71.4	108.4	105.7	106.7	113.0	63.1	83.0	109.0	93.9	99.9	109.9	52.7	75.5	113.0	65.5	84.4
09	FINISHES	118.9	59.1	85.6	120.3	96.5	107.0	119.5	62.2	87.6	125.3	93.6	107.6	112.7	65.9	86.6	118.0	71.8	92.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	66.4	118.2	131.1	88.0	122.5	131.1	67.2	118.3	131.1	75.8	120.1	131.1	66.9	118.3	131.1	68.2	118.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	102.7	65.2	87.7	102.5	93.7	99.0	102.5	73.4	90.8	102.9	102.3	102.6	102.5	71.3	90.0	102.5	86.3	96.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	111.9	53.6	81.5	111.0	86.5	98.2	117.4	59.7	87.2	113.9	93.1	103.0	115.3	59.8	86.3	122.2	65.9	92.8
MF2010	WEIGHTED AVERAGE	120.5	64.0	95.9	111.9	93.1	103.7	122.2	69.0	99.0	115.5	95.1	106.7	112.1	68.8	93.2	119.7	76.1	100.7

DIVISION		CANADA																	
		EDMONTON, ALBERTA			FORT MCMURRAY, ALBERTA			FREDERICTON, NEW BRUNSWICK			GATINEAU, QUEBEC			GRANBY, QUEBEC			HALIFAX, NOVA SCOTIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		106.4	106.4		103.7	103.7		101.9	101.9		102.5	102.5		102.5	102.5		101.5	101.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	146.0	105.7	117.7	120.4	101.9	107.4	100.8	97.3	98.3	95.7	100.5	99.1	96.2	100.5	99.2	105.2	98.8	100.7
0310	Concrete Forming & Accessories	127.2	96.8	101.0	123.0	94.3	98.2	122.7	65.6	73.5	130.3	89.8	95.4	130.3	89.8	95.3	104.9	78.3	81.9
0320	Concrete Reinforcing	140.3	74.1	107.2	155.3	74.1	114.7	136.1	58.5	97.4	151.1	81.3	116.3	151.1	81.3	116.3	147.6	62.8	105.3
0330	Cast-in-Place Concrete	201.0	106.2	161.7	215.2	104.8	169.4	134.8	62.9	104.9	129.0	99.3	116.7	133.3	99.2	119.2	165.6	81.0	130.5
03	CONCRETE	168.4	95.9	132.6	170.0	94.3	132.7	133.1	64.0	99.0	129.2	91.7	110.7	131.2	91.6	111.7	146.0	76.9	111.9
04	MASONRY	193.2	90.7	129.8	207.6	89.6	134.6	192.4	67.6	115.2	163.6	88.6	117.2	163.9	88.6	117.3	193.7	83.4	125.5
05	METALS	130.4	89.2	117.7	130.8	89.0	117.9	123.0	73.3	107.7	103.8	88.7	99.2	103.8	88.6	99.1	130.3	81.6	115.3
06	WOOD, PLASTICS & COMPOSITES	108.6	96.5	101.8	113.7	93.8	102.5	112.9	65.4	86.1	131.6	89.9	108.1	131.6	89.9	108.1	88.7	77.4	82.3
07	THERMAL & MOISTURE PROTECTION	127.2	94.1	113.8	120.1	92.6	108.9	117.3	64.6	95.9	106.2	91.8	100.3	106.2	90.2	99.7	118.6	77.9	102.1
08	OPENINGS	94.4	86.1	92.4	94.7	84.6	92.3	89.3	56.1	81.5	94.7	78.2	90.8	94.7	78.2	90.8	86.5	72.0	83.1
0920	Plaster & Gypsum Board	145.5	95.9	111.8	140.9	93.3	108.5	153.7	64.2	92.8	140.5	89.4	105.8	143.0	89.4	106.6	140.8	76.6	97.1
0950, 0980	Ceilings & Acoustic Treatment	150.5	95.9	114.2	107.2	93.3	97.9	113.3	64.2	80.6	97.4	89.4	92.1	97.4	89.4	92.1	116.1	76.6	89.8
0960	Flooring	135.0	94.3	122.8	130.5	94.3	119.7	128.5	76.7	113.0	130.5	101.4	121.8	130.5	101.4	121.8	118.2	90.0	109.8
0970, 0990	Wall Finishes & Painting/Coating	114.6	112.4	113.3	109.1	97.5	102.2	112.6	67.2	85.3	109.0	93.7	99.8	109.0	93.7	99.8	113.9	82.0	94.7
09	FINISHES	133.3	98.5	113.9	118.9	95.0	105.6	121.4	68.1	91.7	114.5	92.8	102.4	114.9	92.8	102.6	117.2	81.2	97.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	98.4	124.6	131.1	97.5	124.4	131.1	66.9	118.3	131.1	87.3	122.4	131.1	87.3	122.4	131.1	69.6	118.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.2	92.2	97.6	102.9	101.0	102.2	102.6	81.1	94.0	102.9	93.0	98.9	102.5	93.0	98.7	100.7	77.7	91.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	110.3	100.8	105.4	107.1	87.5	96.8	117.2	78.9	97.2	112.6	74.3	92.6	113.2	74.3	92.9	120.1	80.5	99.4
MF2010	WEIGHTED AVERAGE	125.0	95.4	112.1	124.1	94.2	111.1	118.1	74.0	98.9	112.5	89.2	102.3	112.8	89.1	102.4	119.9	80.6	102.8

DIVISION		CANADA																	
		HAMILTON, ONTARIO			HULL, QUEBEC			JOLIETTE, QUEBEC			KAMLOOPS, BRITISH COLUMBIA			KINGSTON, ONTARIO			KITCHENER, ONTARIO		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		108.3	108.3		102.5	102.5		102.5	102.5		105.6	105.6		103.9	103.9		103.8	103.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	117.0	112.7	114.0	95.7	100.5	99.1	96.3	100.6	99.3	118.4	104.0	108.3	113.0	104.5	107.1	101.2	105.1	104.0
0310	Concrete Forming & Accessories	127.9	94.2	98.8	130.3	89.8	95.4	130.3	90.0	95.5	123.5	92.8	97.0	122.9	91.7	96.0	118.0	86.6	90.9
0320	Concrete Reinforcing	153.0	93.1	123.1	151.1	81.3	116.3	142.9	81.4	112.2	112.0	79.2	95.6	167.9	84.9	126.5	103.3	93.0	98.2
0330	Cast-in-Place Concrete	151.7	100.2	130.3	129.0	99.3	116.7	134.4	99.3	119.8	116.3	103.1	110.8	145.7	102.2	127.6	140.7	90.1	11

City Cost Indexes

DIVISION		CANADA																	
		LAVAL, QUEBEC			LETHBRIDGE, ALBERTA			LLOYDMINSTER, ALBERTA			LONDON, ONTARIO			MEDICINE HAT, ALBERTA			MONCTON, NEW BRUNSWICK		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		102.5	102.5		103.7	103.7		103.7	103.7		103.9	103.9		103.7	103.7		101.9	101.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.1	100.5	99.2	113.0	102.5	105.6	112.9	101.9	105.2	116.2	105.3	108.5	111.6	101.9	104.8	97.8	97.5	97.6
0310	Concrete Forming & Accessories	130.5	89.8	95.4	124.2	94.4	98.5	122.4	84.4	89.6	126.1	88.0	93.2	124.1	84.3	89.8	103.7	65.9	71.0
0320	Concrete Reinforcing	151.1	81.3	116.3	155.3	74.1	114.8	155.3	74.0	114.7	130.9	93.0	112.0	155.3	74.0	114.7	139.2	61.5	100.4
0330	Cast-in-Place Concrete	133.3	99.3	119.2	161.4	104.8	137.9	149.7	101.0	129.5	161.6	98.1	135.2	149.7	101.0	129.5	131.1	79.8	109.8
03	CONCRETE	131.2	91.7	111.7	144.7	94.4	119.9	139.1	88.6	114.2	141.5	92.5	117.3	139.2	88.6	114.2	128.5	70.8	100.1
04	MASONRY	163.8	88.6	117.3	181.6	89.6	124.7	163.2	82.9	113.5	196.0	97.0	134.7	163.2	82.9	113.5	165.2	66.2	103.9
05	METALS	103.9	88.7	99.2	124.2	89.0	113.4	106.4	88.9	101.0	122.9	92.0	113.4	106.4	88.8	100.9	104.4	81.5	97.4
06	WOOD, PLASTICS & COMPOSITES	131.8	89.9	108.2	117.3	93.8	104.1	113.7	83.8	96.9	108.5	86.4	96.0	117.3	83.8	98.4	97.8	65.4	79.5
07	THERMAL & MOISTURE PROTECTION	106.8	91.8	100.7	117.4	92.6	107.3	114.3	88.0	103.7	125.2	92.8	112.0	120.9	88.0	107.6	108.9	65.8	91.4
08	OPENINGS	94.7	78.2	90.8	94.7	84.6	92.3	94.7	79.2	91.0	91.1	87.0	90.1	94.7	79.2	91.0	89.2	62.4	82.8
0920	Plaster & Gypsum Board	143.3	89.4	106.7	131.4	93.3	105.5	126.2	83.0	96.8	173.0	86.0	113.8	129.2	83.0	97.7	151.8	64.2	92.2
0950, 0980	Ceilings & Acoustic Treatment	97.4	89.4	92.1	106.3	93.3	97.6	97.4	83.0	87.8	130.1	86.0	100.7	97.4	83.0	87.8	100.9	64.2	76.5
0960	Flooring	130.5	101.4	121.8	130.5	94.3	119.7	130.5	94.3	119.7	132.6	104.1	124.1	130.5	94.3	119.7	117.8	73.4	104.5
0970, 0990	Wall Finishes & Painting/Coating	109.0	93.7	99.8	109.0	106.5	107.5	109.1	83.0	93.4	112.6	99.3	104.6	109.0	83.0	93.4	108.4	52.7	74.9
09	FINISHES	114.9	92.8	102.6	116.5	95.9	105.0	113.9	85.7	98.2	129.0	91.9	108.3	114.2	85.7	98.3	113.4	65.9	86.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	87.3	122.4	131.1	97.5	124.4	131.1	94.1	123.7	131.1	99.0	124.7	131.1	94.1	123.7	131.1	66.9	118.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.5	93.0	97.5	102.7	97.6	100.7	102.9	97.6	100.8	101.5	82.8	94.0	102.5	94.2	99.2	102.5	71.6	90.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	114.4	74.3	93.5	108.4	87.5	97.5	106.1	87.5	96.4	109.7	93.6	101.3	106.1	87.5	96.4	118.8	63.3	89.8
MF2010	WEIGHTED AVERAGE	112.4	89.2	102.3	118.7	93.7	107.8	113.9	90.3	103.6	119.5	91.9	107.5	114.0	89.6	103.4	112.3	71.4	94.5

DIVISION		CANADA																	
		MONTREAL, QUEBEC			MOOSE JAW, SASKATCHEWAN			NEW GLASGOW, NOVA SCOTIA			NEWCASTLE, NEW BRUNSWICK			NORTH BAY, ONTARIO			OSHAWA, ONTARIO		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		104.0	104.0		100.2	100.2		101.5	101.5		101.6	101.6		101.6	101.6		103.8	103.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	107.7	100.0	102.3	112.7	96.5	101.3	104.4	98.9	100.5	98.4	97.3	97.6	119.5	100.4	106.1	112.9	104.5	107.0
0310	Concrete Forming & Accessories	131.4	93.1	98.4	107.3	61.9	68.1	98.8	73.2	76.8	103.7	65.3	70.6	127.4	89.0	94.3	123.8	91.1	95.6
0320	Concrete Reinforcing	135.8	96.4	116.1	109.6	63.8	86.7	173.8	48.2	111.1	139.2	58.4	98.8	205.4	84.4	145.0	163.7	87.1	125.4
0330	Cast-in-Place Concrete	174.5	100.5	143.8	145.3	72.1	114.9	164.2	73.2	126.4	136.1	62.9	105.7	158.1	88.4	129.1	162.7	89.2	132.2
03	CONCRETE	148.7	96.2	122.8	122.3	66.5	94.8	151.6	69.3	111.0	130.9	63.8	97.8	154.2	88.1	121.6	145.4	89.9	118.0
04	MASONRY	172.0	94.1	123.8	161.7	65.5	102.2	182.8	73.2	115.0	165.6	66.1	104.0	188.0	91.5	128.3	162.1	96.0	121.2
05	METALS	124.5	92.8	114.7	102.7	74.9	94.1	116.0	75.3	103.4	104.4	72.8	94.7	117.0	90.4	108.8	105.5	92.6	101.5
06	WOOD, PLASTICS & COMPOSITES	120.2	93.5	105.1	99.0	60.4	77.2	94.6	72.6	82.2	97.8	65.4	79.5	127.3	89.6	106.0	117.2	90.1	101.9
07	THERMAL & MOISTURE PROTECTION	118.4	96.5	109.5	105.6	65.5	89.3	110.4	71.4	94.6	108.9	63.6	90.5	115.7	87.4	104.2	113.1	89.2	103.4
08	OPENINGS	92.8	82.4	90.3	90.1	58.1	82.5	88.3	66.4	83.1	89.2	57.2	81.6	95.9	85.7	93.5	92.2	89.9	91.7
0920	Plaster & Gypsum Board	144.9	92.8	109.5	121.3	59.1	79.0	154.0	71.7	98.0	151.8	64.2	92.2	151.5	89.2	109.1	146.6	89.8	108.0
0950, 0980	Ceilings & Acoustic Treatment	115.8	92.8	100.5	97.4	59.1	71.9	102.5	71.7	82.0	100.9	64.2	76.5	102.5	89.2	93.6	100.8	89.8	93.5
0960	Flooring	138.7	101.4	127.5	120.8	64.4	104.0	118.0	68.5	103.2	117.8	73.4	104.5	136.3	99.2	125.2	127.7	106.8	121.5
0970, 0990	Wall Finishes & Painting/Coating	112.9	105.7	108.6	109.0	68.2	84.5	113.0	65.5	84.4	108.4	52.7	74.9	113.0	93.1	101.1	107.9	106.6	107.1
09	FINISHES	123.1	96.7	108.4	110.3	62.7	83.8	116.0	71.8	91.4	113.4	65.9	86.9	121.6	91.8	105.0	115.7	95.7	104.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	88.6	122.6	131.1	66.1	118.1	131.1	68.2	118.5	131.1	66.9	118.3	131.1	74.5	119.8	131.1	99.7	124.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.3	93.8	98.3	102.9	77.8	92.8	102.5	86.3	96.0	102.5	71.3	90.0	102.5	100.3	101.6	100.5	102.9	101.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	113.8	86.5	99.6	115.4	64.3	88.7	117.7	65.9	90.7	113.4	63.3	87.3	117.7	93.0	104.8	115.6	92.6	103.6
MF2010	WEIGHTED AVERAGE	119.2	93.4	107.9	111.2	70.8	93.6	117.7	76.1	99.6	112.1	69.3	93.5	120.5	92.9	108.5	114.6	96.1	106.5

DIVISION		CANADA																	
		OTTAWA, ONTARIO			OWEN SOUND, ONTARIO			PETERBOROUGH, ONTARIO			PORTAGE LA PRAIRIE, MANITOBA			PRINCE ALBERT, SASKATCHEWAN			PRINCE GEORGE, BRITISH COLUMBIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		103.8	103.8		101.6	101.6		101.6	101.6		103.9	103.9		100.2	100.2		105.6	105.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	110.8	105.0	106.7	115.3	100.9	105.2	114.9	100.8	105.0	113.7	99.9	104.0	107.8	96.7	100.0	121.8	104.0	109.3
0310	Concrete Forming & Accessories	126.4	90.9	95.8	125.1	87.5	92.6	124.9	90.1	94.9	124.3	73.6	80.6	107.3	61.7	67.9	113.0	87.5	91.0
0320	Concrete Reinforcing	144.0	93.0	118.5	174.2	86.5	130.4	167.9	84.9	126.5	155.3	54.9	105.2	114.6	63.8	89.2	112.0	79.2	95.6
0330	Cast-in-Place Concrete	161.6	99.0	135.6	166.0	84.3	132.1	162.0	90.1	132.2	149.7	77.1	119.6	131.6	72.0	106.9	145.8	103.1	128.0
03	CONCRETE	143.6	94.1	119.2	151.0	86.4	119.2	147.1	89.3	118.6	132.7	72.0	102.7	116.7	66.3	91.9	150.0	91.5	121.2
04	MASONRY	175.1	97.0	126.8	165.2	97.													

City Cost Indexes

DIVISION		CANADA																	
		QUEBEC, QUEBEC			RED DEER, ALBERTA			REGINA, SASKATCHEWAN			RIMOUSKI, QUEBEC			ROUYN-NORANDA, QUEBEC			SAINT HYACINTHE, QUEBEC		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		104.4	104.4		103.7	103.7		100.2	100.2		102.5	102.5		102.5	102.5		102.5	102.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.7	100.0	101.1	111.6	101.9	104.8	123.5	98.4	105.9	96.1	99.7	98.6	95.7	100.5	99.1	96.1	100.5	99.2
0310	Concrete Forming & Accessories	131.8	93.4	98.6	139.3	84.3	91.9	114.1	90.4	93.7	130.3	92.8	98.0	130.3	89.8	95.4	130.3	89.8	95.4
0320	Concrete Reinforcing	136.6	96.4	116.5	155.3	74.0	114.7	132.1	83.4	107.8	107.7	96.4	102.1	151.1	81.3	116.3	151.1	81.3	116.3
0330	Cast-in-Place Concrete	142.8	100.9	125.4	149.7	101.0	129.5	173.6	94.9	140.9	135.7	99.2	120.5	129.0	99.3	116.7	133.3	99.3	119.2
03	CONCRETE	133.9	96.4	115.4	140.3	88.6	114.8	150.3	90.6	120.9	125.3	95.6	110.7	129.2	91.7	110.7	131.2	91.7	111.7
04	MASONRY	172.0	94.1	123.8	163.2	82.9	113.5	184.7	94.4	128.8	163.4	94.1	120.5	163.6	88.6	117.2	163.8	88.6	117.3
05	METALS	124.4	93.0	114.7	106.4	88.8	100.9	125.6	85.7	113.3	103.4	92.3	100.0	103.8	88.7	99.2	103.8	88.7	99.2
06	WOOD, PLASTICS & COMPOSITES	119.9	93.5	105.0	117.3	83.8	98.4	98.3	91.3	94.4	131.6	93.2	110.0	131.6	89.9	108.1	131.6	89.9	108.1
07	THERMAL & MOISTURE PROTECTION	118.9	96.6	109.9	130.7	88.0	113.4	117.9	85.6	104.8	106.2	95.9	102.0	106.2	91.8	100.3	106.6	91.8	100.6
08	OPENINGS	94.0	90.3	93.1	94.7	79.2	91.0	90.8	80.2	88.3	94.2	80.5	91.0	94.7	78.2	90.8	94.7	78.2	90.8
0920	Plaster & Gypsum Board	164.8	92.8	115.8	129.2	83.0	97.7	147.8	91.0	109.2	172.1	92.8	118.1	140.3	89.4	105.7	142.7	89.4	106.5
0950, 0980	Ceilings & Acoustic Treatment	122.8	92.8	102.8	97.4	83.0	87.8	123.9	91.0	102.0	96.5	92.8	94.0	96.5	89.4	91.8	96.5	89.4	91.8
0960	Flooring	134.3	101.4	124.5	133.2	94.3	121.6	132.5	66.7	112.8	130.5	101.4	121.8	130.5	101.4	121.8	130.5	101.4	121.8
0970, 0990	Wall Finishes & Painting/Coating	115.4	105.7	109.5	109.0	83.0	93.4	112.9	90.9	99.7	109.0	105.7	107.0	109.0	93.7	99.8	109.0	93.7	99.8
09	FINISHES	126.3	96.7	109.8	115.0	85.7	98.7	125.5	86.8	103.9	118.7	96.5	106.3	114.3	92.8	102.3	114.6	92.8	102.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	88.7	122.6	131.1	94.1	123.7	131.1	73.5	119.6	131.1	88.0	122.5	131.1	87.3	122.4	131.1	87.3	122.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.2	93.8	98.3	102.5	94.2	99.2	100.7	84.2	94.1	102.5	93.7	99.0	102.5	93.0	98.7	98.9	93.0	96.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	110.9	86.5	98.2	106.1	87.5	96.4	115.4	91.4	102.9	113.2	86.5	99.3	113.2	74.3	92.9	114.0	74.3	93.3
MF2010	WEIGHTED AVERAGE	117.5	93.8	107.2	114.5	89.6	103.6	120.3	88.4	106.4	112.3	93.1	103.9	112.5	89.2	102.3	111.9	89.2	102.0

DIVISION		CANADA																	
		SAINT JOHN, NEW BRUNSWICK			SARNIA, ONTARIO			SASKATOON, SASKATCHEWAN			SAULT STE MARIE, ONTARIO			SHERBROOKE, QUEBEC			SOREL, QUEBEC		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		101.5	101.5		101.6	101.6		100.2	100.2		101.6	101.6		102.5	102.5		102.5	102.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.5	98.5	98.5	113.4	100.9	104.6	108.7	98.4	101.5	103.7	100.4	101.4	96.2	100.5	99.2	96.3	100.6	99.3
0310	Concrete Forming & Accessories	123.2	66.3	74.1	123.7	97.4	101.0	107.4	90.4	92.7	113.0	87.0	90.6	130.3	89.8	95.4	130.3	90.0	95.5
0320	Concrete Reinforcing	139.2	61.9	100.6	119.4	86.3	102.9	115.5	83.4	99.5	107.8	84.6	96.2	151.1	81.3	116.3	142.9	81.4	112.2
0330	Cast-in-Place Concrete	134.1	80.7	111.9	149.5	103.7	130.5	141.4	94.9	122.1	134.3	88.5	115.3	133.3	99.3	119.2	134.4	99.3	119.8
03	CONCRETE	131.4	71.4	101.8	133.3	97.4	115.6	122.5	90.6	106.7	117.3	87.3	102.5	131.2	91.7	111.7	130.4	91.7	111.3
04	MASONRY	185.8	72.2	115.5	179.3	101.2	131.0	167.2	94.4	122.2	164.3	94.5	121.1	163.9	88.6	117.3	164.0	88.6	117.3
05	METALS	104.3	82.6	97.6	105.5	91.3	101.1	101.9	85.7	96.9	104.7	90.8	100.4	103.8	88.7	99.2	103.8	88.8	99.2
06	WOOD, PLASTICS & COMPOSITES	121.4	64.5	89.3	118.9	96.8	106.4	98.0	91.3	94.3	106.0	86.5	95.0	131.6	89.9	108.1	131.6	89.9	108.1
07	THERMAL & MOISTURE PROTECTION	109.2	69.6	93.1	112.6	96.7	106.2	106.8	85.6	98.2	111.5	89.4	102.5	106.2	91.8	100.3	106.2	91.8	100.3
08	OPENINGS	89.1	60.8	82.4	95.7	91.5	94.7	90.1	80.2	87.7	87.2	85.3	86.8	94.7	78.2	90.8	94.7	83.0	91.9
0920	Plaster & Gypsum Board	169.4	63.3	97.2	164.7	96.7	118.4	129.7	91.0	103.4	131.7	86.0	100.6	142.7	89.4	106.5	172.1	89.4	115.9
0950, 0980	Ceilings & Acoustic Treatment	107.2	63.3	78.0	102.7	96.7	98.7	119.7	91.0	100.6	97.4	86.0	89.8	96.5	89.4	91.8	96.5	89.4	91.8
0960	Flooring	128.4	73.4	112.0	130.5	108.5	123.9	120.7	66.7	104.6	123.6	102.7	117.3	130.5	101.4	121.8	130.5	101.4	121.8
0970, 0990	Wall Finishes & Painting/Coating	108.4	78.8	90.6	109.0	108.0	108.4	109.9	90.9	98.5	109.0	100.0	103.6	109.0	93.7	99.8	109.0	93.7	99.8
09	FINISHES	120.2	68.5	91.4	119.8	101.1	109.4	116.5	86.8	99.9	111.4	91.3	100.2	114.6	92.8	102.5	118.7	92.8	104.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	67.3	118.3	131.1	77.5	120.4	131.1	73.5	119.6	131.1	98.4	124.6	131.1	87.3	122.4	131.1	87.3	122.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	102.5	81.0	93.9	102.5	110.2	105.6	100.6	84.2	94.0	102.5	96.8	100.2	102.9	93.0	98.9	102.5	93.0	98.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	121.9	90.3	105.4	115.7	94.9	104.8	117.1	91.4	103.7	114.4	93.0	103.2	113.2	74.3	92.9	113.2	74.3	92.9
MF2010	WEIGHTED AVERAGE	114.6	78.3	98.8	115.3	99.5	108.4	111.3	88.4	101.3	110.7	93.1	103.0	112.8	89.2	102.5	113.0	89.4	102.7

DIVISION		CANADA																	
		ST CATHARINES, ONTARIO			ST JEROME, QUEBEC			ST JOHNS, NEWFOUNDLAND			SUDBURY, ONTARIO			SUMMERSIDE, PRINCE EDWARD ISLAND			SYDNEY, NOVA SCOTIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		101.6	101.6		102.5	102.5		103.1	103.1		101.6	101.6		101.5	101.5		101.5	101.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.8	101.8	101.8	95.7	100.5	99.1	116.4	99.9	104.8	101.9	101.3	101.5	112.2	96.4	101.1	100.1	98.9	99.2
0310	Concrete Forming & Accessories	115.9	93.9	96.9	130.3	89.8	95.4	113.8	82.4	86.7	111.9	87.4	90.7	99.1	59.6	65.0	98.8	73.2	76.8
0320	Concrete Reinforcing	104.3	93.0	98.7	151.1	81.3	116.3	161.9	74.4	118.2	105.1	93.0	99.0	171.5	48.3	110.0	173.8	48.2	111.1
0330	Cast-in-Place Concrete	134.4	100.1	120.1	129.0	99.3	116.7	166.6	87.6	133.8	135.5	96.2	119.2	155.8	62.0	116.9	126.6	73.2	104.5
03	CONCRETE	115.8	95.8	105.9	129.2	91.7	110.7	159.3	83.0	121.6	116.2	91.6	104.0	156.5	59.1	108.5	133.8	69.3	102.0
04	MASONRY	158.6	99.7	122.1	163.6	88.6	117.2	187.1	89.8	126.9	158.6	94.9	119.2	181.9	63.7	108.8	180.0	73.2	113.9</

City Cost Indexes

DIVISION		CANADA																	
		THUNDER BAY, ONTARIO			TIMMINS, ONTARIO			TORONTO, ONTARIO			TROI RIVIERES, QUEBEC			TRURO, NOVA SCOTIA			VANCOUVER, BRITISH COLUMBIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		101.6	101.6		101.6	101.6		103.9	103.9		102.5	102.5		101.5	101.5		112.1	112.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	106.8	101.7	103.2	114.9	100.4	104.7	137.0	105.8	115.1	100.9	100.6	100.7	100.1	98.9	99.2	120.3	108.2	111.8
0310	Concrete Forming & Accessories	123.7	90.8	95.3	124.9	89.0	93.9	128.5	99.5	103.4	133.2	90.0	95.9	97.1	73.3	76.5	122.0	91.6	95.8
0320	Concrete Reinforcing	93.2	91.9	92.5	167.9	84.4	126.2	151.3	93.2	122.3	173.8	81.4	127.6	142.9	48.2	95.6	142.2	81.7	112.0
0330	Cast-in-Place Concrete	147.9	98.5	127.4	162.0	88.4	131.5	150.7	108.2	133.1	131.1	99.3	117.9	168.3	73.3	128.8	157.7	99.2	133.4
03	CONCRETE	124.2	93.7	109.2	147.1	88.1	118.0	139.8	101.1	120.7	136.8	91.7	114.6	145.5	69.3	107.9	148.1	92.7	120.8
04	MASONRY	159.3	99.0	122.0	167.9	91.5	120.6	194.2	104.1	138.4	183.8	88.6	124.9	163.4	73.2	107.6	182.3	93.0	127.0
05	METALS	104.4	91.3	100.4	105.5	90.4	100.9	125.1	93.1	115.2	115.1	88.8	107.0	104.6	75.3	95.6	141.4	91.4	126.0
06	WOOD, PLASTICS & COMPOSITES	117.2	89.5	101.6	119.8	89.6	102.7	111.5	98.7	104.3	139.8	89.9	111.7	89.2	72.6	79.9	104.1	91.7	97.1
07	THERMAL & MOISTURE PROTECTION	112.4	93.0	104.5	112.6	87.4	102.4	124.3	99.6	114.2	109.3	91.8	102.2	107.5	71.4	92.9	130.0	88.5	113.2
08	OPENINGS	84.3	87.8	85.1	93.6	85.7	91.7	91.8	96.8	93.0	97.0	83.0	93.7	86.6	66.4	81.8	94.5	87.9	93.0
0920	Plaster & Gypsum Board	162.4	89.2	112.6	142.7	89.2	106.3	155.3	98.6	116.7	186.1	89.4	120.3	141.8	71.7	94.1	140.0	90.9	106.6
0950, 0980	Ceilings & Acoustic Treatment	95.5	89.2	91.3	97.4	89.2	91.9	125.4	98.6	107.6	101.6	89.4	93.5	97.4	71.7	80.3	150.0	90.9	110.7
0960	Flooring	127.7	107.8	121.7	130.5	99.2	121.1	132.8	110.4	126.1	136.3	101.4	125.8	113.1	68.5	99.8	129.2	97.7	119.8
0970, 0990	Wall Finishes & Painting/Coating	107.9	92.1	98.4	109.0	93.1	99.5	114.8	106.6	109.9	113.0	93.7	101.4	109.0	65.5	82.9	114.0	97.7	104.2
09	FINISHES	116.4	94.2	104.0	115.6	91.8	102.4	127.3	102.5	113.5	125.3	92.8	107.2	109.9	71.8	88.7	129.1	93.6	109.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	76.0	120.1	131.1	74.5	119.8	131.1	102.1	125.3	131.1	87.3	122.4	131.1	68.2	118.5	131.1	96.9	124.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.5	84.3	94.0	102.5	100.3	101.6	101.2	94.6	98.6	102.5	93.0	98.7	102.5	86.3	96.0	101.3	82.3	93.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	114.4	93.0	103.2	114.4	93.0	103.2	111.5	96.6	103.7	118.0	74.3	95.2	112.9	65.9	88.4	111.3	81.3	95.6
MF2010	WEIGHTED AVERAGE	110.9	91.7	102.6	115.6	92.9	105.7	120.2	99.0	111.0	117.9	89.4	105.5	113.0	76.1	96.9	123.3	90.0	108.8

DIVISION		CANADA																	
		VICTORIA, BRITISH COLUMBIA			WHITEHORSE, YUKON			WINDSOR, ONTARIO			WINNIPEG, MANITOBA			YARMOUTH, NOVA SCOTIA			YELLOWKNIFE, NWT		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		108.7	108.7		101.7	101.7		101.6	101.6		105.9	105.9		101.5	101.5		101.6	101.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	121.5	107.7	111.8	123.0	97.4	105.0	97.3	101.6	100.3	119.5	101.3	106.7	104.2	98.9	100.5	138.7	101.7	112.8
0310	Concrete Forming & Accessories	112.9	91.0	94.0	117.7	60.9	68.7	123.7	90.0	94.6	131.5	68.1	76.8	98.8	73.2	76.8	116.1	82.0	86.7
0320	Concrete Reinforcing	113.0	81.6	97.3	153.9	61.9	107.9	102.2	93.0	97.6	141.0	57.4	99.3	173.8	48.2	111.1	154.5	64.7	109.6
0330	Cast-in-Place Concrete	146.4	98.6	126.6	191.7	71.3	141.7	137.7	100.3	122.1	181.5	73.8	136.8	162.4	73.2	125.4	231.5	89.4	172.5
03	CONCRETE	152.5	91.9	122.6	158.2	65.4	112.4	117.6	94.1	106.0	153.4	68.7	111.6	150.8	69.3	110.6	176.9	81.7	129.9
04	MASONRY	170.1	93.0	122.4	205.6	63.9	117.9	158.7	97.8	121.0	179.6	69.3	111.4	182.6	73.2	114.9	209.1	76.2	126.8
05	METALS	104.3	87.4	99.1	129.3	74.6	112.5	104.5	91.8	100.6	143.3	74.6	122.1	116.0	75.3	103.4	129.3	79.8	114.0
06	WOOD, PLASTICS & COMPOSITES	101.6	91.6	96.0	100.8	59.6	77.5	117.2	89.1	101.4	111.1	69.0	87.3	94.6	72.6	82.2	100.3	83.7	90.9
07	THERMAL & MOISTURE PROTECTION	115.8	88.3	104.7	125.8	63.4	100.5	112.2	92.2	104.0	118.7	70.7	99.2	110.4	71.4	94.6	122.1	80.0	105.0
08	OPENINGS	91.8	84.1	90.0	95.4	56.8	86.3	84.1	88.1	85.0	93.1	61.6	85.6	88.3	66.4	83.1	94.3	70.5	88.7
0920	Plaster & Gypsum Board	121.7	90.9	100.7	146.1	58.2	86.3	147.7	88.8	107.6	139.7	67.5	90.6	154.0	71.7	98.0	176.0	83.1	112.8
0950, 0980	Ceilings & Acoustic Treatment	99.3	90.9	93.7	127.7	58.2	81.4	95.5	88.8	91.0	143.6	67.5	93.0	102.5	71.7	82.0	133.5	83.1	99.9
0960	Flooring	125.9	77.6	111.5	140.3	62.5	117.0	127.7	105.0	120.9	131.3	74.0	114.1	118.0	68.5	103.2	134.7	94.2	122.6
0970, 0990	Wall Finishes & Painting/Coating	109.9	97.7	102.6	124.2	57.2	83.9	107.9	95.4	100.4	112.9	55.4	78.4	113.0	65.5	84.4	121.6	82.0	97.8
09	FINISHES	114.1	90.1	100.7	130.9	60.6	91.7	114.0	93.5	102.6	127.8	68.3	94.6	116.0	71.8	91.4	134.9	83.7	106.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	72.9	119.5	131.1	65.4	118.0	131.1	75.4	120.0	131.1	67.9	118.5	131.1	68.2	118.5	131.1	68.7	118.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	102.5	82.2	94.4	102.9	76.4	92.3	100.5	83.9	93.9	101.2	65.7	87.0	102.5	86.3	96.0	103.0	96.0	100.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	113.8	81.3	96.8	134.3	63.7	97.5	119.3	94.5	106.4	112.9	66.9	88.9	117.7	65.9	90.7	132.1	87.2	108.7
MF2010	WEIGHTED AVERAGE	115.9	88.1	103.8	126.3	69.8	101.7	110.2	91.7	102.2	123.6	70.8	100.6	117.6	76.1	99.6	128.8	85.8	110.1

Location Factors

Costs shown in RSMeans cost data publications are based on national averages for materials and installation. To adjust these costs to a specific location, simply multiply the base cost by the factor and divide

by 100 for that city. The data is arranged alphabetically by state and postal zip code numbers. For a city not listed, use the factor for a nearby city with similar economic characteristics.

STATE/ZIP	CITY	MAT.	INST.	TOTAL
ALABAMA				
350-352	Birmingham	97.5	74.1	87.3
354	Tuscaloosa	96.7	62.0	81.6
355	Jasper	97.0	56.7	79.4
356	Decatur	96.6	59.1	80.3
357-358	Huntsville	96.7	70.8	85.4
359	Gadsden	96.7	60.8	81.1
360-361	Montgomery	97.9	58.1	80.5
362	Anniston	96.5	63.0	81.9
363	Dothan	96.9	50.5	76.7
364	Evergreen	96.5	51.9	77.1
365-366	Mobile	97.8	65.9	83.9
367	Selma	96.7	50.8	76.7
368	Phenix City	97.3	55.7	79.2
369	Butler	96.8	50.5	76.6
ALASKA				
995-996	Anchorage	121.3	114.3	118.3
997	Fairbanks	120.7	115.0	118.2
998	Juneau	120.6	113.5	117.5
999	Ketchikan	132.0	113.5	124.0
ARIZONA				
850,853	Phoenix	99.4	74.8	88.7
851,852	Mesa/Tempe	98.8	73.8	87.9
855	Globe	99.0	71.2	86.9
856-857	Tucson	97.6	73.6	87.1
859	Show Low	99.1	73.5	88.0
860	Flagstaff	101.0	72.9	88.8
863	Prescott	98.9	69.7	86.2
864	Kingman	97.3	73.2	86.8
865	Chambers	97.3	71.9	86.3
ARKANSAS				
716	Pine Bluff	96.9	62.9	82.1
717	Camden	94.5	50.4	75.3
718	Texarkana	95.7	49.9	75.7
719	Hot Springs	93.8	52.3	75.8
720-722	Little Rock	98.0	63.8	83.1
723	West Memphis	95.6	62.7	81.2
724	Jonesboro	96.3	59.4	80.2
725	Batesville	94.2	55.1	77.2
726	Harrison	95.5	51.1	76.1
727	Fayetteville	93.0	52.9	75.6
728	Russellville	94.1	54.4	76.8
729	Fort Smith	96.8	61.7	81.5
CALIFORNIA				
900-902	Los Angeles	100.1	116.5	107.3
903-905	Inglewood	95.7	113.4	103.4
906-908	Long Beach	97.1	113.4	104.2
910-912	Pasadena	96.3	113.9	104.0
913-916	Van Nuys	99.1	113.9	105.5
917-918	Alhambra	98.2	113.9	105.0
919-921	San Diego	100.2	109.1	104.1
922	Palm Springs	96.7	111.6	103.2
923-924	San Bernardino	94.6	111.2	101.9
925	Riverside	98.9	114.0	105.5
926-927	Santa Ana	96.5	111.6	103.1
928	Anaheim	98.9	114.1	105.6
930	Oxnard	99.6	114.2	105.9
931	Santa Barbara	98.9	114.6	105.7
932-933	Bakersfield	100.8	110.6	105.1
934	San Luis Obispo	99.3	111.6	104.7
935	Mojave	96.8	108.6	101.9
936-938	Fresno	100.0	114.5	106.3
939	Salinas	100.2	120.3	108.9
940-941	San Francisco	106.1	143.8	122.5
942,956-958	Sacramento	101.2	118.6	108.8
943	Palo Alto	99.5	133.1	114.2
944	San Mateo	101.7	132.7	115.2
945	Vallejo	100.6	127.2	112.2
946	Oakland	103.9	133.1	116.6
947	Berkeley	103.4	133.1	116.4
948	Richmond	102.5	131.2	115.0
949	San Rafael	104.2	133.6	117.0
950	Santa Cruz	104.1	120.4	111.2

STATE/ZIP	CITY	MAT.	INST.	TOTAL
CALIFORNIA (CONT'D)				
951	San Jose	102.2	134.6	116.3
952	Stockton	100.5	115.5	107.0
953	Modesto	100.4	114.9	106.7
954	Santa Rosa	100.3	133.4	114.7
955	Eureka	101.6	111.6	106.0
959	Marysville	100.8	115.1	107.0
960	Redding	103.6	114.6	108.4
961	Susanville	102.6	114.6	107.8
COLORADO				
800-802	Denver	101.6	82.6	93.3
803	Boulder	98.6	82.0	91.3
804	Golden	100.6	79.6	91.4
805	Fort Collins	102.1	79.6	92.3
806	Greeley	99.7	76.1	89.4
807	Fort Morgan	99.1	79.6	90.6
808-809	Colorado Springs	101.3	79.3	91.7
810	Pueblo	100.9	78.6	91.2
811	Alamosa	102.0	74.6	90.1
812	Salida	101.7	76.2	90.6
813	Durango	102.4	76.8	91.2
814	Montrose	101.2	76.5	90.5
815	Grand Junction	104.4	76.7	92.4
816	Glenwood Springs	102.2	79.3	92.2
CONNECTICUT				
060	New Britain	100.8	120.4	109.3
061	Hartford	102.0	120.6	110.1
062	Willimantic	101.4	120.6	109.7
063	New London	97.7	120.5	107.6
064	Meriden	99.6	120.5	108.7
065	New Haven	102.2	120.5	110.2
066	Bridgeport	101.8	120.2	109.8
067	Waterbury	101.4	120.1	109.6
068	Norwalk	101.4	126.9	112.5
069	Stamford	101.5	127.9	113.0
D.C.				
200-205	Washington	101.6	91.6	97.2
DELAWARE				
197	Newark	98.8	108.1	102.8
198	Wilmington	99.4	108.1	103.2
199	Dover	99.7	108.1	103.3
FLORIDA				
320,322	Jacksonville	97.2	67.7	84.3
321	Daytona Beach	97.4	74.4	87.3
323	Tallahassee	98.7	58.0	81.0
324	Panama City	98.5	59.1	81.3
325	Pensacola	100.8	62.4	84.1
326,344	Gainesville	98.7	68.0	85.3
327-328,347	Orlando	99.3	71.4	87.1
329	Melbourne	99.9	77.9	90.3
330-332,340	Miami	97.7	74.6	87.6
333	Fort Lauderdale	96.4	73.9	86.6
334,349	West Palm Beach	95.3	72.3	85.3
335-336,346	Tampa	97.9	79.8	90.0
337	St. Petersburg	100.2	64.7	84.7
338	Lakeland	97.1	79.3	89.4
339,341	Fort Myers	96.4	74.1	86.7
342	Sarasota	99.3	75.3	88.8
GEORGIA				
300-303,399	Atlanta	96.8	75.3	87.5
304	Statesboro	96.5	56.9	79.2
305	Gainesville	95.2	62.8	81.1
306	Athens	94.7	65.1	81.8
307	Dalton	96.4	60.1	80.6
308-309	Augusta	95.6	64.8	82.2
310-312	Macon	96.2	65.9	83.0
313-314	Savannah	98.4	62.0	82.6
315	Waycross	97.3	60.7	81.3
316	Valdosta	97.5	62.6	82.3
317,398	Albany	97.5	62.5	82.3
318-319	Columbus	97.4	66.6	84.0

Location Factors

STATE/ZIP	CITY	MAT.	INST.	TOTAL
HAWAII				
967	Hilo	110.4	121.0	115.0
968	Honolulu	114.9	121.0	117.6
STATES & POSS.				
969	Guam	131.2	58.9	99.7
IDAHO				
832	Pocatello	100.8	78.4	91.1
833	Twin Falls	101.9	68.5	87.4
834	Idaho Falls	99.6	75.5	89.1
835	Lewiston	108.3	85.5	98.4
836-837	Boise	99.8	79.4	90.9
838	Coeur d'Alene	107.6	83.3	97.0
ILLINOIS				
600-603	North Suburban	98.5	135.9	114.8
604	Joliet	98.4	140.7	116.8
605	South Suburban	98.5	135.9	114.8
606-608	Chicago	98.9	141.9	117.6
609	Kankakee	94.8	130.8	110.5
610-611	Rockford	98.9	123.5	109.6
612	Rock Island	96.6	99.8	98.0
613	La Salle	97.7	125.1	109.6
614	Galesburg	97.6	107.6	102.0
615-616	Peoria	99.9	110.4	104.5
617	Bloomington	96.9	109.9	102.6
618-619	Champaign	100.2	108.0	103.6
620-622	East St. Louis	95.5	109.3	101.5
623	Quincy	96.9	101.6	99.0
624	Effingham	96.3	106.3	100.6
625	Decatur	98.2	105.9	101.6
626-627	Springfield	99.0	107.2	102.5
628	Centralia	94.1	108.4	100.4
629	Carbondale	93.9	106.2	99.2
INDIANA				
460	Anderson	95.5	83.1	90.1
461-462	Indianapolis	98.3	85.1	92.6
463-464	Gary	96.8	110.1	102.6
465-466	South Bend	95.7	84.2	90.7
467-468	Fort Wayne	96.0	79.2	88.7
469	Kokomo	93.3	82.0	88.4
470	Lawrenceburg	93.3	79.3	87.2
471	New Albany	94.4	77.0	86.8
472	Columbus	96.6	80.9	89.7
473	Muncie	97.3	81.8	90.6
474	Bloomington	98.7	81.5	91.2
475	Washington	95.0	83.3	89.9
476-477	Evansville	96.5	86.6	92.1
478	Terre Haute	97.2	85.8	92.2
479	Lafayette	96.3	82.9	90.5
IOWA				
500-503,509	Des Moines	99.4	83.9	92.7
504	Mason City	96.5	66.6	83.5
505	Fort Dodge	96.6	58.8	80.2
506-507	Waterloo	98.3	70.9	86.4
508	Creston	96.7	77.9	88.5
510-511	Sioux City	99.1	73.6	88.0
512	Sibley	97.7	57.5	80.2
513	Spencer	99.2	57.5	81.0
514	Carroll	96.4	72.2	85.9
515	Council Bluffs	100.2	78.8	90.9
516	Shenandoah	97.1	72.1	86.2
520	Dubuque	98.5	80.4	90.6
521	Decorah	97.4	65.6	83.5
522-524	Cedar Rapids	99.4	83.4	92.4
525	Ottumwa	97.3	73.0	86.7
526	Burlington	96.6	76.9	88.0
527-528	Davenport	98.4	93.4	96.2
KANSAS				
660-662	Kansas City	99.4	95.7	97.7
664-666	Topeka	99.4	66.5	85.1
667	Fort Scott	97.7	74.3	87.5
668	Emporia	97.8	70.0	85.7
669	Belleville	99.4	65.6	84.7
670-672	Wichita	99.9	65.1	84.8
673	Independence	99.9	70.3	87.0
674	Salina	100.4	67.0	85.9
675	Hutchinson	95.8	65.4	82.5
676	Hays	99.6	65.6	84.8
677	Colby	100.2	65.6	85.1

STATE/ZIP	CITY	MAT.	INST.	TOTAL
KANSAS (CONT'D)				
678	Dodge City	101.7	66.5	86.4
679	Liberal	99.5	66.4	85.1
KENTUCKY				
400-402	Louisville	97.8	84.2	91.9
403-405	Lexington	97.0	82.4	90.7
406	Frankfort	97.9	82.4	91.1
407-409	Corbin	94.4	73.3	85.2
410	Covington	95.2	93.2	94.3
411-412	Ashland	94.0	100.1	96.6
413-414	Campton	95.1	80.2	88.6
415-416	Pikeville	96.2	90.0	93.5
417-418	Hazard	94.6	79.9	88.2
420	Paducah	93.2	86.2	90.2
421-422	Bowling Green	95.5	84.8	90.8
423	Owensboro	95.6	88.9	92.7
424	Henderson	93.0	87.9	90.8
425-426	Somerset	92.7	81.5	87.8
427	Elizabethtown	92.2	83.7	88.5
LOUISIANA				
700-701	New Orleans	101.5	69.8	87.7
703	Thibodaux	98.7	64.9	84.0
704	Hammond	96.3	54.9	78.3
705	Lafayette	98.5	62.7	82.9
706	Lake Charles	98.6	65.0	84.0
707-708	Baton Rouge	100.4	63.6	84.4
710-711	Shreveport	98.4	59.6	81.5
712	Monroe	96.7	56.4	79.2
713-714	Alexandria	96.8	57.8	79.8
MAINE				
039	Kittery	95.1	85.7	91.0
040-041	Portland	100.8	91.2	96.6
042	Lewiston	98.3	91.2	95.2
043	Augusta	100.3	80.8	91.8
044	Bangor	97.6	90.8	94.7
045	Bath	96.1	83.0	90.4
046	Machias	95.7	86.5	91.7
047	Houlton	95.9	86.6	91.8
048	Rockland	95.0	86.5	91.3
049	Waterville	96.2	80.8	89.5
MARYLAND				
206	Waldorf	97.5	82.2	90.9
207-208	College Park	97.6	83.9	91.7
209	Silver Spring	96.9	83.8	91.2
210-212	Baltimore	100.5	82.8	92.8
214	Annapolis	100.3	81.8	92.3
215	Cumberland	96.0	81.9	89.9
216	Easton	97.4	69.3	85.2
217	Hagerstown	96.9	82.8	90.7
218	Salisbury	97.8	63.3	82.8
219	Elkton	95.1	81.9	89.4
MASSACHUSETTS				
010-011	Springfield	100.0	109.8	104.3
012	Pittsfield	99.6	109.6	103.9
013	Greenfield	97.5	110.2	103.0
014	Fitchburg	96.3	124.6	108.6
015-016	Worcester	100.0	124.6	110.7
017	Framingham	95.5	131.0	111.0
018	Lowell	99.4	130.1	112.8
019	Lawrence	100.1	131.3	113.7
020-022, 024	Boston	101.8	138.1	117.6
023	Brockton	100.4	126.3	111.7
025	Buzzards Bay	94.9	126.7	108.8
026	Hyannis	97.6	126.7	110.3
027	New Bedford	99.6	126.8	111.4
MICHIGAN				
480,483	Royal Oak	94.2	107.5	100.0
481	Ann Arbor	96.4	107.9	101.4
482	Detroit	97.9	109.3	102.8
484-485	Flint	96.1	96.8	96.4
486	Saginaw	95.7	92.4	94.2
487	Bay City	95.8	92.5	94.4
488-489	Lansing	97.7	94.1	96.1
490	Battle Creek	96.8	87.4	92.7
491	Kalamazoo	97.1	85.9	92.2
492	Jackson	95.0	95.9	95.4
493,495	Grand Rapids	98.1	84.5	92.2
494	Muskegon	95.6	85.5	91.2

Location Factors

STATE/ZIP	CITY	MAT.	INST.	TOTAL
MICHIGAN (CONT'D)				
496	Traverse City	94.6	81.0	88.6
497	Gaylord	95.5	84.4	90.7
498-499	Iron mountain	97.5	87.4	93.1
MINNESOTA				
550-551	Saint Paul	100.2	118.8	108.3
553-555	Minneapolis	100.6	119.9	109.0
556-558	Duluth	99.0	108.6	103.2
559	Rochester	98.8	104.9	101.5
560	Mankato	96.6	102.4	99.1
561	Windom	95.3	93.3	94.4
562	Willmar	94.9	103.0	98.4
563	St. Cloud	96.3	117.8	105.7
564	Brainerd	96.3	102.3	98.9
565	Detroit Lakes	98.3	96.7	97.6
566	Bemidji	97.7	99.5	98.5
567	Thief River Falls	97.3	93.8	95.7
MISSISSIPPI				
386	Clarksdale	95.8	53.8	77.5
387	Greenville	99.4	63.1	83.6
388	Tupelo	97.3	56.1	79.4
389	Greenwood	97.0	53.3	78.0
390-392	Jackson	99.1	63.5	83.6
393	Meridian	96.2	65.3	82.7
394	Laurel	97.2	57.1	79.7
395	Biloxi	97.7	59.1	80.9
396	Mccomb	95.7	52.9	77.1
397	Columbus	97.1	55.1	78.8
MISSOURI				
630-631	St. Louis	99.6	107.6	103.1
633	Bowling Green	98.1	94.7	96.6
634	Hannibal	97.1	92.6	95.1
635	Kirksville	100.3	90.0	95.8
636	Flat River	99.0	95.8	97.6
637	Cape Girardeau	99.1	90.6	95.4
638	Sikeston	97.5	90.6	94.5
639	Poplar Bluff	97.0	90.3	94.1
640-641	Kansas City	101.6	106.7	103.8
644-645	St. Joseph	100.7	93.9	97.8
646	Chillicothe	97.7	96.2	97.1
647	Harrisonville	97.3	102.2	99.5
648	Joplin	99.5	81.0	91.5
650-651	Jefferson City	98.4	93.4	96.2
652	Columbia	98.6	93.5	96.4
653	Sedalia	98.1	92.6	95.7
654-655	Rolla	96.3	95.6	96.0
656-658	Springfield	99.9	82.1	92.1
MONTANA				
590-591	Billings	102.2	77.9	91.6
592	Wolf Point	101.7	74.9	90.0
593	Miles City	99.5	74.7	88.7
594	Great Falls	103.4	77.1	92.0
595	Havre	100.6	74.2	89.1
596	Helena	102.0	75.1	90.2
597	Butte	102.0	77.2	91.2
598	Missoula	99.4	76.4	89.4
599	Kalispell	98.4	76.3	88.8
NEBRASKA				
680-681	Omaha	99.6	79.3	90.7
683-685	Lincoln	99.5	75.3	89.0
686	Columbus	97.5	77.9	88.9
687	Norfolk	99.2	77.5	89.8
688	Grand Island	99.1	77.8	89.9
689	Hastings	98.5	81.2	90.9
690	Mccook	98.1	72.1	86.8
691	North Platte	98.5	79.6	90.2
692	Valentine	100.6	73.6	88.9
693	Alliance	100.4	71.6	87.9
NEVADA				
889-891	Las Vegas	100.2	109.4	104.2
893	Ely	98.7	103.4	100.8
894-895	Reno	99.0	93.8	96.7
897	Carson City	99.1	93.8	96.8
898	Elko	97.6	86.1	92.6
NEW HAMPSHIRE				
030	Nashua	100.6	93.6	97.6
031	Manchester	102.1	93.6	98.4

STATE/ZIP	CITY	MAT.	INST.	TOTAL
NEW HAMPSHIRE (CONT'D)				
032-033	Concord	100.8	92.3	97.1
034	Keene	97.4	74.0	87.2
035	Littleton	97.1	77.2	88.4
036	Charleston	96.9	70.1	85.2
037	Claremont	96.0	70.1	84.7
038	Portsmouth	98.2	94.2	96.4
NEW JERSEY				
070-071	Newark	101.9	125.6	112.2
072	Elizabeth	99.5	125.3	110.7
073	Jersey City	98.5	125.5	110.2
074-075	Paterson	100.2	125.2	111.1
076	Hackensack	98.4	125.5	110.2
077	Long Branch	97.8	124.1	109.2
078	Dover	98.7	125.4	110.3
079	Summit	98.7	125.3	110.3
080,083	Vineland	97.5	123.4	108.8
081	Camden	99.4	123.6	109.9
082,084	Atlantic City	98.1	123.5	109.2
085-086	Trenton	100.8	124.0	110.9
087	Point Pleasant	99.2	121.4	108.8
088-089	New Brunswick	99.7	125.2	110.8
NEW MEXICO				
870-872	Albuquerque	99.2	73.6	88.0
873	Gallup	99.3	73.6	88.1
874	Farmington	99.7	73.6	88.3
875	Santa Fe	100.5	73.6	88.8
877	Las Vegas	97.7	73.6	87.2
878	Socorro	97.3	73.6	87.0
879	Truth/Consequences	97.0	70.4	85.4
880	Las Cruces	95.8	70.4	84.7
881	Clovis	98.1	73.5	87.4
882	Roswell	99.8	73.6	88.4
883	Carrizozo	100.1	73.6	88.5
884	Tucumcari	98.8	73.5	87.8
NEW YORK				
100-102	New York	103.8	166.4	131.1
103	Staten Island	99.7	163.9	127.6
104	Bronx	98.0	163.9	126.7
105	Mount Vernon	97.9	133.3	113.3
106	White Plains	98.0	133.3	113.4
107	Yonkers	102.5	133.4	116.0
108	New Rochelle	98.2	133.3	113.5
109	Suffern	98.0	126.2	110.3
110	Queens	100.8	162.9	127.8
111	Long Island City	102.2	162.9	128.6
112	Brooklyn	102.6	162.9	128.9
113	Flushing	102.3	162.9	128.7
114	Jamaica	100.6	162.9	127.7
115,117,118	Hicksville	100.7	146.6	120.7
116	Far Rockaway	102.4	162.9	128.7
119	Riverhead	101.4	146.6	121.1
120-122	Albany	98.6	100.2	99.3
123	Schenectady	97.8	100.2	98.8
124	Kingston	100.7	118.3	108.4
125-126	Poughkeepsie	100.0	127.5	112.0
127	Monticello	99.4	116.5	106.8
128	Glens Falls	92.6	95.0	93.6
129	Plattsburgh	97.3	88.4	93.4
130-132	Syracuse	98.5	97.0	97.9
133-135	Utica	96.7	93.2	95.1
136	Watertown	98.1	91.9	95.4
137-139	Binghamton	98.1	99.4	98.6
140-142	Buffalo	99.7	105.8	102.4
143	Niagara Falls	96.9	103.9	100.0
144-146	Rochester	100.3	95.6	98.3
147	Jamestown	96.0	87.8	92.4
148-149	Elmira	95.9	93.1	94.7
NORTH CAROLINA				
270,272-274	Greensboro	98.8	56.3	80.3
271	Winston-Salem	98.5	57.1	80.5
275-276	Raleigh	98.2	55.1	79.4
277	Durham	100.2	54.4	80.2
278	Rocky Mount	96.0	53.2	77.4
279	Elizabeth City	96.9	52.2	77.4
280	Gastonia	98.4	56.1	80.0
281-282	Charlotte	98.7	57.6	80.8
283	Fayetteville	100.9	58.5	82.5
284	Wilmington	97.2	56.6	79.5
285	Kinston	95.3	53.7	77.2

Location Factors

STATE/ZIP	CITY	MAT.	INST.	TOTAL
NORTH CAROLINA (CONT'D)				
286	Hickory	95.6	54.9	77.9
287-288	Asheville	97.6	55.9	79.4
289	Murphy	96.4	49.2	75.8
NORTH DAKOTA				
580-581	Fargo	101.7	67.6	86.9
582	Grand Forks	101.8	51.6	79.9
583	Devils Lake	101.0	58.6	82.5
584	Jamestown	101.0	45.1	76.7
585	Bismarck	102.0	64.0	85.5
586	Dickinson	101.9	57.9	82.7
587	Minot	101.8	71.0	88.4
588	Williston	100.3	58.0	81.9
OHIO				
430-432	Columbus	98.6	89.7	94.7
433	Marion	95.0	83.7	90.1
434-436	Toledo	98.7	96.4	97.7
437-438	Zanesville	95.5	85.6	91.2
439	Steubenville	96.8	94.5	95.8
440	Lorain	98.8	90.4	95.2
441	Cleveland	98.9	100.0	99.4
442-443	Akron	99.8	93.4	97.0
444-445	Youngstown	99.1	88.3	94.4
446-447	Canton	99.2	85.0	93.0
448-449	Mansfield	96.6	85.6	91.8
450	Hamilton	97.4	84.5	91.8
451-452	Cincinnati	97.8	84.8	92.1
453-454	Dayton	97.5	83.2	91.3
455	Springfield	97.5	84.2	91.7
456	Chillicothe	96.4	92.2	94.5
457	Athens	99.1	80.6	91.1
458	Lima	99.6	84.4	93.0
OKLAHOMA				
730-731	Oklahoma City	97.3	65.4	83.4
734	Ardmore	95.2	62.3	80.9
735	Lawton	97.5	63.3	82.6
736	Clinton	96.5	63.6	82.2
737	Enid	97.2	60.9	81.4
738	Woodward	95.3	63.8	81.6
739	Guymon	96.3	60.5	80.7
740-741	Tulsa	97.4	62.2	82.1
743	Miami	94.0	68.3	82.8
744	Muskogee	96.6	56.3	79.0
745	McAlester	93.7	61.1	79.5
746	Ponca City	94.3	62.5	80.5
747	Durant	94.3	64.0	81.1
748	Shawnee	95.7	62.2	81.1
749	Poteau	93.5	62.1	79.8
OREGON				
970-972	Portland	97.2	101.4	99.1
973	Salem	99.0	100.5	99.7
974	Eugene	97.1	100.4	98.5
975	Medford	98.4	98.2	98.3
976	Klamath Falls	98.2	98.2	98.2
977	Bend	97.3	100.5	98.7
978	Pendleton	93.1	102.5	97.2
979	Vale	91.3	89.8	90.7
PENNSYLVANIA				
150-152	Pittsburgh	99.7	105.8	102.3
153	Washington	96.7	103.2	99.5
154	Uniontown	97.1	102.2	99.4
155	Bedford	98.0	92.6	95.7
156	Greensburg	98.0	101.6	99.5
157	Indiana	96.9	100.1	98.3
158	Dubois	98.4	97.1	97.8
159	Johnstown	97.9	97.3	97.7
160	Butler	92.1	102.2	96.5
161	New Castle	92.1	97.2	94.4
162	Kittanning	92.5	103.4	97.3
163	Oil City	92.1	97.0	94.3
164-165	Erie	94.1	95.0	94.5
166	Altoona	94.3	92.7	93.6
167	Bradford	95.3	96.8	96.0
168	State College	94.9	93.0	94.1
169	Wellsboro	95.9	92.3	94.3
170-171	Harrisburg	99.6	95.9	98.0
172	Chambersburg	96.0	89.7	93.2
173-174	York	96.5	96.0	96.3
175-176	Lancaster	94.8	89.3	92.4

STATE/ZIP	CITY	MAT.	INST.	TOTAL
PENNSYLVANIA (CONT'D)				
177	Williamsport	93.6	79.3	87.4
178	Sunbury	95.5	96.3	95.8
179	Pottsville	94.7	98.0	96.1
180	Lehigh Valley	95.4	112.5	102.9
181	Allentown	97.6	108.8	102.4
182	Hazleton	95.0	98.8	96.7
183	Stroudsburg	94.9	102.0	98.0
184-185	Scranton	98.3	99.7	98.9
186-187	Wilkes-Barre	94.7	99.2	96.7
188	Montrose	94.4	97.1	95.6
189	Doylestown	94.6	120.8	106.0
190-191	Philadelphia	98.9	133.4	113.9
193	Westchester	95.8	121.7	107.1
194	Norristown	94.9	129.5	110.0
195-196	Reading	97.1	101.1	98.8
PUERTO RICO				
009	San Juan	122.1	24.6	79.7
RHODE ISLAND				
028	Newport	99.0	116.6	106.6
029	Providence	101.5	116.6	108.1
SOUTH CAROLINA				
290-292	Columbia	97.2	57.3	79.8
293	Spartanburg	96.4	57.4	79.5
294	Charleston	97.7	66.4	84.1
295	Florence	96.2	57.8	79.4
296	Greenville	96.2	56.5	78.9
297	Rock Hill	95.6	51.2	76.3
298	Aiken	96.4	70.4	85.1
299	Beaufort	97.1	45.7	74.7
SOUTH DAKOTA				
570-571	Sioux Falls	100.0	58.8	82.1
572	Watertown	98.5	50.2	77.5
573	Mitchell	97.5	49.5	76.6
574	Aberdeen	100.1	50.6	78.6
575	Pierre	100.8	59.2	82.7
576	Mobridge	98.1	49.8	77.1
577	Rapid City	100.0	60.3	82.7
TENNESSEE				
370-372	Nashville	97.9	74.1	87.5
373-374	Chattanooga	99.5	65.5	84.7
375,380-381	Memphis	98.5	71.3	86.7
376	Johnson City	99.2	56.7	80.7
377-379	Knoxville	96.2	60.5	80.6
382	McKenzie	96.6	60.4	80.9
383	Jackson	98.3	62.5	82.7
384	Columbia	95.3	67.5	83.2
385	Cookeville	96.4	60.4	80.7
TEXAS				
750	Mckinney	99.3	48.9	77.3
751	Waxahackie	99.3	56.4	80.6
752-753	Dallas	100.1	65.8	85.2
754	Greenville	99.4	42.2	74.5
755	Texarkana	98.4	49.7	77.2
756	Longview	99.0	40.5	73.5
757	Tyler	98.9	54.6	79.6
758	Palestine	95.4	55.8	78.2
759	Lufkin	95.9	59.1	79.9
760-761	Fort Worth	99.6	62.5	83.5
762	Denton	98.2	46.6	75.7
763	Wichita Falls	97.8	55.0	79.2
764	Eastland	96.5	49.1	75.9
765	Temple	95.0	52.7	76.6
766-767	Waco	97.2	57.3	79.8
768	Brownwood	98.5	48.4	76.7
769	San Angelo	98.2	49.5	77.0
770-772	Houston	98.7	70.9	86.6
773	Huntsville	97.2	56.9	79.6
774	Wharton	98.1	53.8	78.8
775	Galveston	96.3	69.7	84.7
776-777	Beaumont	96.7	61.2	81.2
778	Bryan	94.1	63.0	80.5
779	Victoria	98.2	42.7	74.1
780	Laredo	97.1	53.7	78.2
781-782	San Antonio	97.5	64.5	83.1
783-784	Corpus Christi	99.7	53.7	79.6
785	Mc Allen	99.7	46.6	76.6
786-787	Austin	98.6	59.1	81.4

Location Factors

STATE/ZIP	CITY	MAT.	INST.	TOTAL
TEXAS (CONT'D)				
788	Del Rio	99.4	46.2	76.3
789	Giddings	96.4	55.6	78.6
790-791	Amarillo	98.2	60.0	81.6
792	Childress	97.9	56.9	80.0
793-794	Lubbock	100.0	56.3	81.0
795-796	Abilene	98.3	53.6	78.8
797	Midland	99.9	53.6	79.7
798-799,885	El Paso	97.2	50.6	76.9
UTAH				
840-841	Salt Lake City	102.2	66.8	86.8
842,844	Ogden	97.9	68.8	85.2
843	Logan	99.7	68.8	86.2
845	Price	100.1	65.3	84.9
846-847	Provo	100.1	66.7	85.6
VERMONT				
050	White River Jct.	97.9	79.7	90.0
051	Bellows Falls	96.6	94.7	95.8
052	Bennington	96.9	95.3	96.2
053	Brattleboro	97.2	94.5	96.0
054	Burlington	101.5	85.1	94.4
056	Montpelier	99.2	84.3	92.7
057	Rutland	99.2	85.1	93.0
058	St. Johnsbury	97.9	79.2	89.8
059	Guildhall	96.8	79.2	89.1
VIRGINIA				
220-221	Fairfax	99.3	84.4	92.8
222	Arlington	100.6	84.7	93.6
223	Alexandria	99.8	85.4	93.5
224-225	Fredericksburg	98.2	83.0	91.6
226	Winchester	98.7	82.1	91.5
227	Culpeper	98.6	80.8	90.9
228	Harrisonburg	98.8	68.1	85.5
229	Charlottesville	99.2	67.3	85.3
230-232	Richmond	100.4	68.9	86.7
233-235	Norfolk	100.0	68.8	86.4
236	Newport News	99.2	68.2	85.7
237	Portsmouth	98.6	66.1	84.5
238	Petersburg	98.6	68.9	85.6
239	Farmville	97.8	53.3	78.5
240-241	Roanoke	100.2	66.0	85.3
242	Bristol	98.1	55.6	79.6
243	Pulaski	97.7	58.3	80.6
244	Staunton	98.4	62.7	82.9
245	Lynchburg	98.6	66.1	84.5
246	Grundy	98.0	53.4	78.6
WASHINGTON				
980-981,987	Seattle	102.5	104.8	103.5
982	Everett	102.1	99.6	101.0
983-984	Tacoma	102.3	100.0	101.3
985	Olympia	101.0	100.0	100.6
986	Vancouver	103.1	93.2	98.8
988	Wenatchee	102.0	87.1	95.5
989	Yakima	102.5	94.4	99.0
990-992	Spokane	102.5	82.7	93.8
993	Richland	102.2	89.6	96.7
994	Clarkston	100.6	80.7	92.0
WEST VIRGINIA				
247-248	Bluefield	97.1	91.7	94.7
249	Lewisburg	98.4	91.4	95.4
250-253	Charleston	99.0	94.1	96.9
254	Martinsburg	98.3	86.1	93.0
255-257	Huntington	99.8	95.2	97.8
258-259	Beckley	96.9	92.0	94.8
260	Wheeling	99.8	93.8	97.2
261	Parkersburg	98.9	91.4	95.6
262	Buckhannon	98.2	93.6	96.2
263-264	Clarksburg	98.8	93.5	96.5
265	Morgantown	98.8	92.6	96.1
266	Gassaway	98.2	92.8	95.8
267	Romney	98.2	90.4	94.8
268	Petersburg	98.0	90.1	94.6
WISCONSIN				
530,532	Milwaukee	100.9	107.9	104.0
531	Kenosha	100.2	102.9	101.4
534	Racine	99.7	102.6	101.0
535	Beloit	99.6	101.9	100.6
537	Madison	99.5	99.8	99.6

STATE/ZIP	CITY	MAT.	INST.	TOTAL
WISCONSIN (CONT'D)				
538	Lancaster	97.4	93.5	95.7
539	Portage	96.1	97.9	96.9
540	New Richmond	96.2	95.9	96.1
541-543	Green Bay	100.5	94.1	97.7
544	Wausau	95.7	94.4	95.2
545	Rhineland	98.7	92.4	95.9
546	La Crosse	97.2	95.0	96.3
547	Eau Claire	98.7	96.4	97.7
548	Superior	96.1	97.6	96.7
549	Oshkosh	96.3	92.4	94.6
WYOMING				
820	Cheyenne	100.1	65.7	85.2
821	Yellowstone Nat'l Park	97.7	65.2	83.5
822	Wheatland	98.7	64.6	83.9
823	Rawlins	100.2	67.8	86.1
824	Worland	98.3	64.1	83.4
825	Riverton	99.3	64.9	84.3
826	Casper	100.4	60.7	83.1
827	Newcastle	98.2	67.8	84.9
828	Sheridan	100.9	65.2	85.4
829-831	Rock Springs	101.8	65.4	85.9
CANADIAN FACTORS (reflect Canadian currency)				
ALBERTA				
	Calgary	124.7	95.4	111.9
	Edmonton	125.0	95.4	112.1
	Fort McMurray	124.1	94.2	111.1
	Lethbridge	118.7	93.7	107.8
	Lloydminster	113.9	90.3	103.6
	Medicine Hat	114.0	89.6	103.4
	Red Deer	114.5	89.6	103.6
BRITISH COLUMBIA				
	Kamloops	114.9	92.4	105.1
	Prince George	115.9	91.7	105.3
	Vancouver	123.3	90.0	108.8
	Victoria	115.9	88.1	103.8
MANITOBA				
	Brandon	118.7	77.3	100.7
	Portage la Prairie	113.9	75.6	97.2
	Winnipeg	123.6	70.8	100.6
NEW BRUNSWICK				
	Bathurst	112.1	68.6	93.1
	Dalhousie	112.1	68.8	93.2
	Fredericton	118.1	74.0	98.9
	Moncton	112.3	71.4	94.5
	Newcastle	112.1	69.3	93.5
	St. John	114.6	78.3	98.8
NEWFOUNDLAND				
	Corner Brook	122.2	69.0	99.0
	St. Johns	122.0	80.4	103.9
NORTHWEST TERRITORIES				
	Yellowknife	128.8	85.8	110.1
NOVA SCOTIA				
	Bridgewater	113.4	76.1	97.2
	Dartmouth	119.7	76.1	100.7
	Halifax	119.9	80.6	102.8
	New Glasgow	117.7	76.1	99.6
	Sydney	115.6	76.1	98.4
	Truro	113.0	76.1	96.9
	Yarmouth	117.6	76.1	99.6
ONTARIO				
	Barrie	117.3	94.9	107.5
	Brantford	115.5	98.8	108.2
	Cornwall	115.5	95.1	106.7
	Hamilton	119.3	95.3	108.8
	Kingston	116.6	95.2	107.3
	Kitchener	111.6	92.0	103.1
	London	119.5	91.9	107.5
	North Bay	120.5	92.9	108.5
	Oshawa	114.6	96.1	106.5
	Ottawa	119.2	92.5	107.5
	Owen Sound	117.4	93.0	106.8
	Peterborough	115.5	94.9	106.5
	Sarnia	115.3	99.5	108.4

Location Factors

STATE/ZIP	CITY	MAT.	INST.	TOTAL
ONTARIO (CONT'D)	Sault Ste Marie	110.7	93.1	103.0
	St. Catharines	109.7	93.0	102.4
	Sudbury	109.9	91.7	101.9
	Thunder Bay	110.9	91.7	102.6
	Timmins	115.6	92.9	105.7
	Toronto	120.2	99.0	111.0
	Windsor	110.2	91.7	102.2
PRINCE EDWARD ISLAND				
	Charlottetown	120.5	64.0	95.9
	Summerside	119.5	64.1	95.4
QUEBEC				
	Cap-de-la-Madeleine	112.8	89.4	102.6
	Charlesbourg	112.8	89.4	102.6
	Chicoutimi	111.9	93.1	103.7
	Gatineau	112.5	89.2	102.3
	Granby	112.8	89.1	102.4
	Hull	112.6	89.2	102.4
	Joliette	113.0	89.4	102.7
	Laval	112.4	89.2	102.3
	Montreal	119.2	93.4	107.9
	Quebec	117.5	93.8	107.2
	Rimouski	112.3	93.1	103.9
	Rouyn-Noranda	112.5	89.2	102.3
	Saint Hyacinthe	111.9	89.2	102.0
	Sherbrooke	112.8	89.2	102.5
	Sorel	113.0	89.4	102.7
	St Jerome	112.5	89.2	102.3
	Trois Rivières	117.9	89.4	105.5
SASKATCHEWAN				
	Moose Jaw	111.2	70.8	93.6
	Prince Albert	110.3	69.0	92.3
	Regina	120.3	88.4	106.4
	Saskatoon	111.3	88.4	101.3
YUKON				
	Whitehorse	126.3	69.8	101.7

R011105-05 Tips for Accurate Estimating

1. Use pre-printed or columnar forms for orderly sequence of dimensions and locations and for recording telephone quotations.
 2. Use only the front side of each paper or form except for certain pre-printed summary forms.
 3. Be consistent in listing dimensions: For example, length x width x height. This helps in rechecking to ensure that the total length of partitions is appropriate for the building area.
 4. Use printed (rather than measured) dimensions where given.
 5. Add up multiple printed dimensions for a single entry where possible.
 6. Measure all other dimensions carefully.
 7. Use each set of dimensions to calculate multiple related quantities.
 8. Convert foot and inch measurements to decimal feet when listing. Memorize decimal equivalents to .01 parts of a foot (1/8" equals approximately .01').
 9. Do not "round off" quantities until the final summary.
 10. Mark drawings with different colors as items are taken off.
 11. Keep similar items together, different items separate.
 12. Identify location and drawing numbers to aid in future checking for completeness.
 13. Measure or list everything on the drawings or mentioned in the specifications.
 14. It may be necessary to list items not called for to make the job complete.
 15. Be alert for: Notes on plans such as N.T.S. (not to scale); changes in scale throughout the drawings; reduced size drawings; discrepancies between the specifications and the drawings.
 16. Develop a consistent pattern of performing an estimate.
For example:
 - a. Start the quantity takeoff at the lower floor and move to the next higher floor.
 - b. Proceed from the main section of the building to the wings.
 - c. Proceed from south to north or vice versa, clockwise or counterclockwise.
 - d. Take off floor plan quantities first, elevations next, then detail drawings.
 17. List all gross dimensions that can be either used again for different quantities, or used as a rough check of other quantities for verification (exterior perimeter, gross floor area, individual floor areas, etc.).
 18. Utilize design symmetry or repetition (repetitive floors, repetitive wings, symmetrical design around a center line, similar room layouts, etc.).
Note: Extreme caution is needed here so as not to omit or duplicate an area.
 19. Do not convert units until the final total is obtained. For instance, when estimating concrete work, keep all units to the nearest cubic foot, then summarize and convert to cubic yards.
 20. When figuring alternatives, it is best to total all items involved in the basic system, then total all items involved in the alternates. Therefore you work with positive numbers in all cases. When adds and deducts are used, it is often confusing whether to add or subtract a portion of an item; especially on a complicated or involved alternate.
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R011105-50 Metric Conversion Factors

Description: This table is primarily for converting customary U.S. units in the left hand column to SI metric units in the right hand column. In addition,

conversion factors for some commonly encountered Canadian and non-SI metric units are included.

If You Know		Multiply By		To Find
Length	Inches	x	25.4 ^a	Millimeters
	Feet	x	0.3048 ^a	Meters
	Yards	x	0.9144 ^a	Meters
	Miles (statute)	x	1.609	Kilometers
Area	Square inches	x	645.2	Square millimeters
	Square feet	x	0.0929	Square meters
	Square yards	x	0.8361	Square meters
Volume (Capacity)	Cubic inches	x	16,387	Cubic millimeters
	Cubic feet	x	0.02832	Cubic meters
	Cubic yards	x	0.7646	Cubic meters
	Gallons (U.S. liquids) ^b	x	0.003785	Cubic meters ^c
	Gallons (Canadian liquid) ^b	x	0.004546	Cubic meters ^c
	Ounces (U.S. liquid) ^b	x	29.57	Milliliters ^{c, d}
	Quarts (U.S. liquid) ^b	x	0.9464	Liters ^{c, d}
Force	Gallons (U.S. liquid) ^b	x	3.785	Liters ^{c, d}
	Kilograms force ^d	x	9.807	Newtons
	Pounds force	x	4.448	Newtons
	Pounds force	x	0.4536	Kilograms force ^d
	Kips	x	4448	Newtons
Pressure, Stress, Strength (Force per unit area)	Kips	x	453.6	Kilograms force ^d
	Kilograms force per square centimeter ^d	x	0.09807	Megapascals
	Pounds force per square inch (psi)	x	0.006895	Megapascals
	Kips per square inch	x	6.895	Megapascals
	Pounds force per square inch (psi)	x	0.07031	Kilograms force per square centimeter ^d
	Pounds force per square foot	x	47.88	Pascals
Bending Moment Or Torque	Pounds force per square foot	x	4.882	Kilograms force per square meter ^d
	Inch-pounds force	x	0.01152	Meter-kilograms force ^d
	Inch-pounds force	x	0.1130	Newton-meters
	Foot-pounds force	x	0.1383	Meter-kilograms force ^d
	Foot-pounds force	x	1.356	Newton-meters
Mass	Meter-kilograms force ^d	x	9.807	Newton-meters
	Ounces (avoirdupois)	x	28.35	Grams
	Pounds (avoirdupois)	x	0.4536	Kilograms
	Tons (metric)	x	1000	Kilograms
	Tons, short (2000 pounds)	x	907.2	Kilograms
Mass per Unit Volume	Tons, short (2000 pounds)	x	0.9072	Megagrams ^e
	Pounds mass per cubic foot	x	16.02	Kilograms per cubic meter
	Pounds mass per cubic yard	x	0.5933	Kilograms per cubic meter
	Pounds mass per gallon (U.S. liquid) ^b	x	119.8	Kilograms per cubic meter
Temperature	Pounds mass per gallon (Canadian liquid) ^b	x	99.78	Kilograms per cubic meter
	Degrees Fahrenheit	(F-32)/1.8	=	Degrees Celsius
	Degrees Fahrenheit	(F+459.67)/1.8	=	Degrees Kelvin
Temperature	Degrees Celsius	C+273.15	=	Degrees Kelvin

^aThe factor given is exact

^bOne U.S. gallon = 0.8327 Canadian gallon

^c1 liter = 1000 milliliters = 1000 cubic centimeters

1 cubic decimeter = 0.001 cubic meter

^dMetric but not SI unit

^eCalled "tonne" in England and

"metric ton" in other metric countries

R011105-60 Weights and Measures**Measures of Length**

- 1 Mile = 1760 Yards = 5280 Feet
- 1 Yard = 3 Feet = 36 inches
- 1 Foot = 12 Inches
- 1 Mil = 0.001 Inch
- 1 Fathom = 2 Yards = 6 Feet
- 1 Rod = 5.5 Yards = 16.5 Feet
- 1 Hand = 4 Inches
- 1 Span = 9 Inches
- 1 Micro-inch = One Millionth Inch or 0.000001 Inch
- 1 Micron = One Millionth Meter + 0.00003937 Inch

Surveyor's Measure

- 1 Mile = 8 Furlongs = 80 Chains
- 1 Furlong = 10 Chains = 220 Yards
- 1 Chain = 4 Rods = 22 Yards = 66 Feet = 100 Links
- 1 Link = 7.92 Inches

Square Measure

- 1 Square Mile = 640 Acres = 6400 Square Chains
- 1 Acre = 10 Square Chains = 4840 Square Yards = 43,560 Sq. Ft.
- 1 Square Chain = 16 Square Rods = 484 Square Yards = 4356 Sq. Ft.
- 1 Square Rod = 30.25 Square Yards = 272.25 Square Feet = 625 Square Lines
- 1 Square Yard = 9 Square Feet
- 1 Square Foot = 144 Square Inches
- An Acre equals a Square 208.7 Feet per Side

Cubic Measure

- 1 Cubic Yard = 27 Cubic Feet
- 1 Cubic Foot = 1728 Cubic Inches
- 1 Cord of Wood = 4 x 4 x 8 Feet = 128 Cubic Feet
- 1 Perch of Masonry = 16½ x 1½ x 1 Foot = 24.75 Cubic Feet

Avoirdupois or Commercial Weight

- 1 Gross or Long Ton = 2240 Pounds
- 1 Net or Short ton = 2000 Pounds
- 1 Pound = 16 Ounces = 7000 Grains
- 1 Ounce = 16 Drachms = 437.5 Grains
- 1 Stone = 14 Pounds

Shipping Measure

For Measuring Internal Capacity of a Vessel:

- 1 Register Ton = 100 Cubic Feet

For Measurement of Cargo:

Approximately 40 Cubic Feet of Merchandise is considered a Shipping Ton, unless that bulk would weigh more than 2000 Pounds, in which case Freight Charge may be based upon weight.

40 Cubic Feet = 32.143 U.S. Bushels = 31.16 Imp. Bushels

Liquid Measure

- 1 Imperial Gallon = 1.2009 U.S. Gallon = 277.42 Cu. In.
- 1 Cubic Foot = 7.48 U.S. Gallons

R011110-10 Architectural Fees

Tabulated below are typical percentage fees by project size, for good professional architectural service. Fees may vary from those listed depending upon degree of design difficulty and economic conditions in any particular area.

Rates can be interpolated horizontally and vertically. Various portions of the same project requiring different rates should be adjusted proportionately. For alterations, add 50% to the fee for the first \$500,000 of project cost and add 25% to the fee for project cost over \$500,000.

Architectural fees tabulated below include Structural, Mechanical and Electrical Engineering Fees. They do not include the fees for special consultants such as kitchen planning, security, acoustical, interior design, etc.

Civil Engineering fees are included in the Architectural fee for project sites requiring minimal design such as city sites. However, separate Civil Engineering fees must be added when utility connections require design, drainage calculations are needed, stepped foundations are required, or provisions are required to protect adjacent wetlands.

Building Types	Total Project Size in Thousands of Dollars						
	100	250	500	1,000	5,000	10,000	50,000
Factories, garages, warehouses, repetitive housing	9.0%	8.0%	7.0%	6.2%	5.3%	4.9%	4.5%
Apartments, banks, schools, libraries, offices, municipal buildings	12.2	12.3	9.2	8.0	7.0	6.6	6.2
Churches, hospitals, homes, laboratories, museums, research	15.0	13.6	12.7	11.9	9.5	8.8	8.0
Memorials, monumental work, decorative furnishings	—	16.0	14.5	13.1	10.0	9.0	8.3

R011110-30 Engineering Fees

Typical Structural Engineering Fees based on type of construction and total project size. These fees are included in Architectural Fees.

Type of Construction	Total Project Size (in thousands of dollars)			
	\$500	\$500-\$1,000	\$1,000-\$5,000	Over \$5000
Industrial buildings, factories & warehouses	Technical payroll times 2.0 to 2.5	1.60%	1.25%	1.00%
Hotels, apartments, offices, dormitories, hospitals, public buildings, food stores		2.00%	1.70%	1.20%
Museums, banks, churches and cathedrals		2.00%	1.75%	1.25%
Thin shells, prestressed concrete, earthquake resistive		2.00%	1.75%	1.50%
Parking ramps, auditoriums, stadiums, convention halls, hangars & boiler houses		2.50%	2.00%	1.75%
Special buildings, major alterations, underpinning & future expansion	↓	Add to above 0.5%	Add to above 0.5%	Add to above 0.5%

For complex reinforced concrete or unusually complicated structures, add 20% to 50%.

Typical Mechanical and Electrical Engineering Fees are based on the size of the subcontract. The fee structure for both are shown below. These fees are included in Architectural Fees.

Type of Construction	Subcontract Size							
	\$25,000	\$50,000	\$100,000	\$225,000	\$350,000	\$500,000	\$750,000	\$1,000,000
Simple structures	6.4%	5.7%	4.8%	4.5%	4.4%	4.3%	4.2%	4.1%
Intermediate structures	8.0	7.3	6.5	5.6	5.1	5.0	4.9	4.8
Complex structures	10.1	9.0	9.0	8.0	7.5	7.5	7.0	7.0

For renovations, add 15% to 25% to applicable fee.

R012157-20 Construction Time Requirements

Table lists average construction time in months for different types, sizes, and values of building projects. Design time runs 25% to 40% of construction time.

Building Type	Size S.F.	Project Value	Construction Duration
Industrial/Warehouse	100,000	\$8,000,000	14 Months
	500,000	\$32,000,000	19 Months
	1,000,000	\$75,000,000	21 Months
Offices/Retail	50,000	\$7,000,000	15 Months
	250,000	\$28,000,000	23 months
	500,000	\$58,000,000	34 months
Institutional/Hospitals/Laboratory	200,000	\$45,000,000	31 months
	500,000	\$110,000,000	52 months
	750,000	\$160,000,000	55 months
	1,000,000	\$210,000,000	60 months

R012909-80 Sales Tax by State

State sales tax on materials is tabulated below (5 states have no sales tax). Many states allow local jurisdictions, such as a county or city, to levy additional sales tax.

Some projects may be sales tax exempt, particularly those constructed with public funds.

State	Tax (%)	State	Tax (%)	State	Tax (%)	State	Tax (%)
Alabama	4	Illinois	6.25	Montana	0	Rhode Island	7
Alaska	0	Indiana	7	Nebraska	5.5	South Carolina	6
Arizona	5.6	Iowa	6	Nevada	6.85	South Dakota	4
Arkansas	6	Kansas	6.3	New Hampshire	0	Tennessee	7
California	7.25	Kentucky	6	New Jersey	7	Texas	6.25
Colorado	2.9	Louisiana	4	New Mexico	5.13	Utah	5.95
Connecticut	6.35	Maine	5	New York	4	Vermont	6
Delaware	0	Maryland	6	North Carolina	4.75	Virginia	5
District of Columbia	6	Massachusetts	6.25	North Dakota	5	Washington	6.5
Florida	6	Michigan	6	Ohio	5.5	West Virginia	6
Georgia	4	Minnesota	6.88	Oklahoma	4.5	Wisconsin	5
Hawaii	4	Mississippi	7	Oregon	0	Wyoming	4
Idaho	6	Missouri	4.23	Pennsylvania	6	Average	5.06 %

Sales Tax by Province (Canada)

GST - a value-added tax, which the government imposes on most goods and services provided in or imported into Canada. PST - a retail sales tax, which three of the provinces impose on the price of most goods and some

services. QST - a value-added tax, similar to the federal GST, which Quebec imposes. HST - Five provinces have combined their retail sales tax with the federal GST into one harmonized tax.

Province	PST (%)	QST (%)	GST(%)	HST(%)
Alberta	0	0	5	0
British Columbia	7	0	5	0
Manitoba	7	0	5	0
New Brunswick	0	0	0	13
Newfoundland	0	0	0	13
Northwest Territories	0	0	5	0
Nova Scotia	0	0	0	15
Ontario	0	0	0	13
Prince Edward Island	0	0	5	14
Quebec	0	9.975	5	0
Saskatchewan	5	0	5	0
Yukon	0	0	5	0

R012909-85 Unemployment Taxes and Social Security Taxes

State unemployment tax rates vary not only from state to state, but also with the experience rating of the contractor. The federal unemployment tax rate is 6.0% of the first \$7,000 of wages. This is reduced by a credit of up to 5.4% for timely payment to the state. The minimum federal unemployment tax is 0.6% after all credits.

Social security (FICA) for 2014 is estimated at time of publication to be 7.65% of wages up to \$115,800.

R012909-90 Overtime

One way to improve the completion date of a project or eliminate negative float from a schedule is to compress activity duration times. This can be achieved by increasing the crew size or working overtime with the proposed crew.

cost chart based on a five, six, or seven day week with an eight through twelve hour day. Payroll percentage increases for time and one half and double time are shown for the various working days.

To determine the costs of working overtime to compress activity duration times, consider the following examples. Below is an overtime efficiency and

Days per Week	Hours per Day	Production Efficiency					Payroll Cost Factors	
		1st Week	2nd Week	3rd Week	4th Week	Average 4 Weeks	@ 1-1/2 Times	@ 2 Times
5	8	100%	100%	100%	100%	100 %	100 %	100 %
	9	100	100	95	90	96.25	105.6	111.1
	10	100	95	90	85	91.25	110.0	120.0
	11	95	90	75	65	81.25	113.6	127.3
	12	90	85	70	60	76.25	116.7	133.3
6	8	100	100	95	90	96.25	108.3	116.7
	9	100	95	90	85	92.50	113.0	125.9
	10	95	90	85	80	87.50	116.7	133.3
	11	95	85	70	65	78.75	119.7	139.4
	12	90	80	65	60	73.75	122.2	144.4
7	8	100	95	85	75	88.75	114.3	128.6
	9	95	90	80	70	83.75	118.3	136.5
	10	90	85	75	65	78.75	121.4	142.9
	11	85	80	65	60	72.50	124.0	148.1
	12	85	75	60	55	68.75	126.2	152.4

General Requirements

R0131 Project Management & Coordination

R013113-40 Builder's Risk Insurance

Builder's risk insurance is insurance on a building during construction. Premiums are paid by the owner or the contractor. Blasting, collapse and underground insurance would raise total insurance costs above those listed. Floater policy for materials delivered to the job runs \$.75 to \$1.25 per \$100 value. Contractor equipment insurance runs \$.50 to \$1.50 per \$100 value. Insurance for miscellaneous tools to \$1,500 value runs from \$.30 to \$.75 per \$100 value.

Tabulated below are New England Builder's Risk insurance rates in dollars per \$100 value for \$1,000 deductible. For \$25,000 deductible, rates can be reduced 13% to 34%. On contracts over \$1,000,000, rates may be lower than those tabulated. Policies are written annually for the total completed value in place. For "all risk" insurance (excluding flood, earthquake and certain other perils) add \$.025 to total rates below.

Coverage	Frame Construction (Class 1)		Brick Construction (Class 4)		Fire Resistive (Class 6)	
	Range	Average	Range	Average	Range	Average
Fire Insurance	\$.350 to \$.850	\$.600	\$.158 to \$.189	\$.174	\$.052 to \$.080	\$.070
Extended Coverage	.115 to .200	.158	.080 to .105	.101	.081 to .105	.100
Vandalism	.012 to .016	.014	.008 to .011	.011	.008 to .011	.010
Total Annual Rate	\$.477 to \$1.066	\$.772	\$.246 to \$.305	\$.286	\$.141 to \$.196	\$.180

R013113-50 General Contractor's Overhead

There are two distinct types of overhead on a construction project: Project overhead and main office overhead. Project overhead includes those costs at a construction site not directly associated with the installation of construction materials. Examples of project overhead costs include the following:

1. Superintendent
2. Construction office and storage trailers
3. Temporary sanitary facilities
4. Temporary utilities
5. Security fencing
6. Photographs
7. Cleanup
8. Performance and payment bonds

The above project overhead items are also referred to as general requirements and therefore are estimated in Division 1. Division 1 is the first division listed in the CSI MasterFormat but it is usually the last division estimated. The sum of the costs in Divisions 1 through 49 is referred to as the sum of the direct costs.

All construction projects also include indirect costs. The primary components of indirect costs are the contractor's main office overhead and profit. The amount of the main office overhead expense varies depending on the following:

1. Owner's compensation
2. Project managers' and estimators' wages
3. Clerical support wages
4. Office rent and utilities
5. Corporate legal and accounting costs
6. Advertising
7. Automobile expenses
8. Association dues
9. Travel and entertainment expenses

These costs are usually calculated as a percentage of annual sales volume. This percentage can range from 35% for a small contractor doing less than \$500,000 to 5% for a large contractor with sales in excess of \$100 million.

R013113-60 Workers' Compensation Insurance Rates by Trade

The table below tabulates the national averages for workers' compensation insurance rates by trade and type of building. The average "Insurance Rate" is multiplied by the "% of Building Cost" for each trade. This produces

the "Workers' Compensation" cost by % of total labor cost, to be added for each trade by building type to determine the weighted average workers' compensation rate for the building types analyzed.

Trade	Insurance Rate (% Labor Cost)		% of Building Cost			Workers' Compensation		
	Range	Average	Office Bldgs.	Schools & Apts.	Mfg.	Office Bldgs.	Schools & Apts.	Mfg.
Excavation, Grading, etc.	3.9 % to 18.7%	9.7%	4.8%	4.9%	4.5%	0.47%	0.48%	0.44%
Piles & Foundations	5.8 to 37	14.7	7.1	5.2	8.7	1.04	0.76	1.28
Concrete	4.6 to 38.6	13.1	5.0	14.8	3.7	0.66	1.94	0.48
Masonry	5.1 to 35	13.5	6.9	7.5	1.9	0.93	1.01	0.26
Structural Steel	5.8 to 108.2	34.6	10.7	3.9	17.6	3.70	1.35	6.09
Miscellaneous & Ornamental Metals	5.3 to 31.2	12.0	2.8	4.0	3.6	0.34	0.48	0.43
Carpentry & Millwork	5.5 to 34.9	15.4	3.7	4.0	0.5	0.57	0.62	0.08
Metal or Composition Siding	5.8 to 68.3	18.2	2.3	0.3	4.3	0.42	0.05	0.78
Roofing	5.8 to 93.3	31.3	2.3	2.6	3.1	0.72	0.81	0.97
Doors & Hardware	4.2 to 34.8	11.1	0.9	1.4	0.4	0.10	0.16	0.04
Sash & Glazing	5.3 to 36.8	13.1	3.5	4.0	1.0	0.46	0.52	0.13
Lath & Plaster	3.7 to 35	11.6	3.3	6.9	0.8	0.38	0.80	0.09
Tile, Marble & Floors	3.3 to 27.1	8.5	2.6	3.0	0.5	0.22	0.26	0.04
Acoustical Ceilings	3.4 to 36.7	8.1	2.4	0.2	0.3	0.19	0.02	0.02
Painting	5 to 33	11.5	1.5	1.6	1.6	0.17	0.18	0.18
Interior Partitions	5.5 to 34.9	15.4	3.9	4.3	4.4	0.60	0.66	0.68
Miscellaneous Items	2.5 to 150	14.4	5.2	3.7	9.7	0.75	0.53	1.40
Elevators	1.6 to 14.4	5.7	2.1	1.1	2.2	0.12	0.06	0.13
Sprinklers	3.2 to 18.3	7.2	0.5	—	2.0	0.04	—	0.14
Plumbing	2.6 to 17.5	7.1	4.9	7.2	5.2	0.35	0.51	0.37
Heat., Vent., Air Conditioning	4 to 18.8	8.8	13.5	11.0	12.9	1.19	0.97	1.14
Electrical	2.8 to 13.2	5.8	10.1	8.4	11.1	0.59	0.49	0.64
Total	1.6 % to 150%	—	100.0%	100.0%	100.0%	14.01%	12.66%	15.81%
Overall Weighted Average			14.16%					

Workers' Compensation Insurance Rates by States

The table below lists the weighted average workers' compensation base rate for each state with a factor comparing this with the national average of 14.0%.

State	Weighted Average	Factor	State	Weighted Average	Factor	State	Weighted Average	Factor
Alabama	20.3%	145	Kentucky	14.9%	106	North Dakota	9.6%	69
Alaska	14.3	102	Louisiana	19.3	138	Ohio	8.6	61
Arizona	13.1	94	Maine	12.7	91	Oklahoma	12.9	92
Arkansas	8.6	61	Maryland	14.6	104	Oregon	12.3	88
California	26.8	191	Massachusetts	12.0	86	Pennsylvania	18.1	129
Colorado	7.5	54	Michigan	16.9	121	Rhode Island	12.6	90
Connecticut	24.6	176	Minnesota	23.5	168	South Carolina	19.6	140
Delaware	12.4	89	Mississippi	13.8	99	South Dakota	15.5	111
District of Columbia	11.5	82	Missouri	15.4	110	Tennessee	12.5	89
Florida	11.1	79	Montana	8.9	64	Texas	9.5	68
Georgia	29.2	209	Nebraska	18.3	131	Utah	9.1	65
Hawaii	8.4	60	Nevada	9.0	64	Vermont	13.6	97
Idaho	10.7	76	New Hampshire	20.8	149	Virginia	9.9	71
Illinois	28.1	201	New Jersey	15.0	107	Washington	10.9	78
Indiana	5.7	41	New Mexico	15.0	107	West Virginia	8.3	59
Iowa	15.1	108	New York	17.9	128	Wisconsin	13.6	97
Kansas	8.7	62	North Carolina	17.4	124	Wyoming	6.3	45
Weighted Average for U.S. is 14.2% of payroll = 100%								

Rates in the following table are the base or manual costs per \$100 of payroll for workers' compensation in each state. Rates are usually applied to straight time wages only and not to premium time wages and bonuses.

The weighted average skilled worker rate for 35 trades is 14%. For bidding purposes, apply the full value of workers' compensation directly

to total labor costs, or if labor is 38%, materials 42% and overhead and profit 20% of total cost, carry $38/80 \times 14\% = 6.6\%$ of cost (before overhead and profit) into overhead. Rates vary not only from state to state but also with the experience rating of the contractor.

Rates are the most current available at the time of publication.

R013113-60 Workers' Compensation Insurance Rates by Trade and State (cont.)

State	Carpentry — 3 stories or less 5651	Carpentry — interior cab. work 5437	Carpentry — general 5403	Concrete Work — NOC 5213	Concrete Work — flat (flr., sdwk.) 5221	Electrical Wiring — inside 5190	Excavation — earth NOC 6217	Excavation — rock 6217	Glaziers 5462	Insulation Work 5479	Lathing 5443	Masonry 5022	Painting & Decorating 5474	Pile Driving 6003	Plastering 5480	Plumbing 5183
AL	34.03	17.01	24.59	13.79	10.37	8.87	16.42	16.42	19.75	19.84	9.24	23.79	15.91	18.57	15.88	8.73
AK	17.14	9.44	11.58	10.41	9.44	5.63	8.23	8.23	32.03	14.36	11.73	10.86	10.79	21.68	11.31	6.20
AZ	21.40	9.27	20.28	10.31	6.93	6.08	7.07	7.07	10.80	14.99	5.47	13.01	12.78	10.80	8.64	6.84
AR	12.80	4.77	9.18	6.63	5.16	4.03	6.82	6.82	8.14	7.67	3.99	8.30	7.08	8.10	13.00	4.55
CA	34.87	34.83	34.86	16.55	16.55	13.24	18.65	18.65	24.16	16.48	17.83	25.13	23.59	23.18	35.04	17.48
CO	8.95	4.93	6.07	6.68	4.75	2.92	5.49	5.49	6.00	7.27	3.95	8.29	6.56	6.51	5.69	4.16
CT	30.95	18.48	31.07	26.49	14.43	7.89	16.02	16.02	20.24	20.60	9.92	31.53	18.60	20.17	18.75	11.28
DE	12.46	12.46	9.93	10.07	8.80	4.53	7.70	7.70	10.90	9.93	6.60	11.53	13.39	15.03	10.90	6.60
DC	8.92	7.25	6.94	12.65	7.38	4.69	8.02	8.02	9.61	6.63	9.83	9.32	5.82	17.36	8.00	7.80
FL	11.32	8.62	11.92	12.51	6.20	6.17	7.30	7.30	10.56	10.45	5.53	10.92	10.23	17.84	9.68	5.63
GA	68.34	20.32	28.40	21.36	15.09	12.05	17.32	17.32	19.39	18.80	11.94	35.11	33.04	26.44	19.65	12.76
HI	8.51	6.92	12.69	7.05	4.02	4.47	5.40	5.40	8.22	5.20	6.26	7.01	6.19	7.32	8.33	5.31
ID	14.63	6.84	12.43	11.48	5.28	4.43	7.25	7.25	8.81	9.06	4.46	10.55	9.38	7.65	8.43	5.10
IL	33.34	21.75	28.57	38.59	16.83	10.03	14.53	14.53	25.55	21.41	14.32	28.94	18.57	24.53	32.84	12.51
IN	8.36	4.21	6.98	4.56	4.15	2.83	3.92	3.92	5.29	6.15	3.85	5.14	4.97	7.23	3.71	2.56
IA	15.46	11.35	19.21	14.85	11.16	5.20	11.01	11.01	15.76	9.89	6.48	14.30	10.13	11.38	21.73	7.80
KS	14.92	7.39	9.74	8.07	5.70	4.46	5.55	5.55	7.54	8.17	4.09	8.38	7.75	7.56	6.20	5.23
KY	18.75	13.00	20.00	8.50	6.50	6.00	14.00	14.00	22.12	11.15	7.60	7.50	9.00	16.03	12.93	5.00
LA	31.05	16.86	25.02	13.35	12.37	7.85	14.11	14.11	19.19	15.06	7.99	17.31	17.64	18.85	14.84	7.10
ME	12.24	8.87	16.18	16.43	8.70	4.74	12.34	12.34	14.82	12.79	5.09	10.88	12.44	9.00	9.99	5.90
MD	11.40	15.89	15.00	19.22	6.00	5.23	8.11	8.11	13.77	12.42	6.15	10.11	6.40	15.19	9.17	6.65
MA	8.68	5.23	9.61	18.85	6.24	2.84	4.35	4.35	9.58	7.78	5.27	10.55	5.09	12.92	4.68	3.50
MI	18.41	10.45	18.41	18.27	12.58	5.82	13.28	13.28	11.67	10.92	10.45	18.82	13.49	37.00	10.88	7.18
MN	20.27	20.82	34.13	11.58	13.15	5.83	11.00	11.00	36.85	18.37	11.55	15.59	17.55	27.58	11.58	8.09
MS	22.76	9.99	13.34	9.60	6.67	6.18	9.49	9.49	14.94	10.15	5.94	13.12	11.01	13.14	10.43	8.17
MO	19.66	11.10	12.81	12.38	10.34	6.15	9.96	9.96	9.47	11.55	7.44	15.13	11.42	13.38	12.15	9.00
MT	9.67	6.59	10.80	6.22	5.67	3.71	7.41	7.41	7.50	8.67	4.15	7.62	8.22	7.95	6.80	4.79
NE	21.80	13.15	21.48	18.23	11.20	8.03	17.38	17.38	12.05	21.53	8.35	18.73	13.00	13.93	13.68	8.73
NV	10.41	6.82	12.39	10.83	5.26	4.33	8.75	8.75	6.55	7.55	3.41	6.63	7.10	8.43	6.21	6.76
NH	24.24	11.06	19.63	28.40	16.47	5.63	12.61	12.61	14.12	12.63	7.30	16.19	20.93	18.53	11.20	9.49
NJ	18.69	13.18	18.69	15.51	11.69	5.13	10.83	10.83	11.21	12.63	15.13	18.71	11.28	15.79	15.13	6.96
NM	25.01	9.56	18.92	11.73	9.43	6.05	7.22	7.22	10.95	10.56	6.11	15.74	12.91	12.66	14.20	6.70
NY	12.54	10.74	19.18	23.71	17.15	7.85	12.16	12.16	18.72	10.88	12.86	21.24	14.99	20.13	10.02	10.83
NC	30.12	9.54	15.76	16.11	9.31	10.56	15.41	15.41	14.28	13.03	8.11	13.05	14.08	16.61	14.12	10.73
ND	9.54	4.31	9.54	5.43	5.43	3.75	4.13	4.13	10.50	10.50	9.93	6.52	6.00	10.59	9.93	6.11
OH	7.73	4.31	5.52	4.67	4.92	3.43	4.79	4.79	8.83	11.38	36.65	6.93	8.15	6.99	7.80	3.52
OK	18.82	10.32	12.49	13.50	7.66	6.82	9.48	9.48	11.79	11.31	5.13	14.63	10.66	11.24	14.01	6.82
OR	22.30	8.52	11.92	10.51	10.42	5.35	9.08	9.08	12.64	10.88	6.09	14.37	11.81	11.44	10.81	6.35
PA	19.22	19.22	15.60	19.54	13.58	7.39	11.11	11.11	14.34	15.60	14.34	16.04	17.13	19.44	14.34	9.19
RI	9.84	11.55	13.75	12.56	9.68	4.58	8.16	8.16	10.61	12.48	5.17	10.07	8.82	19.30	8.69	6.75
SC	29.32	13.80	17.10	12.84	8.21	9.82	12.01	12.01	12.92	14.13	9.57	15.39	16.10	15.67	14.47	9.40
SD	20.86	17.96	20.35	16.10	10.49	5.08	9.75	9.75	10.84	14.71	6.95	14.65	11.22	12.63	10.35	10.02
TN	22.71	10.14	11.54	10.75	7.08	5.49	10.05	10.05	11.07	10.34	6.60	11.69	8.27	12.08	11.04	5.17
TX	10.12	7.33	10.12	8.08	5.99	5.98	7.60	7.60	8.25	9.27	4.15	8.69	7.28	10.26	7.28	5.27
UT	14.72	6.59	7.50	7.34	6.57	3.56	6.79	6.79	7.45	7.15	6.41	8.96	7.73	6.72	5.56	4.17
VT	15.69	10.21	13.77	13.60	11.57	4.37	11.83	11.83	12.40	15.34	5.79	11.92	8.78	10.43	9.35	7.38
VA	12.38	8.14	8.89	10.51	5.76	4.50	7.40	7.40	8.02	7.27	5.45	7.98	8.93	8.31	6.69	5.07
WA	9.18	9.18	9.18	8.55	8.55	3.18	6.68	6.68	13.99	6.79	9.18	13.26	12.26	21.68	10.43	4.33
WV	14.85	5.54	8.34	7.68	4.51	3.53	6.46	6.46	6.74	6.29	4.33	8.39	6.03	8.09	6.54	3.52
WI	12.52	13.14	17.06	11.98	7.59	5.08	7.84	7.84	13.88	11.22	4.00	13.69	12.43	28.24	10.16	5.95
WY	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
AVG.	18.19	11.07	15.38	13.15	8.92	5.83	9.69	9.69	13.15	11.67	8.12	13.49	11.54	14.65	11.55	7.08

R013113-60 Workers' Compensation Insurance Rates by Trade and State (cont.)

State	Roofing 5551	Sheet Metal Work (HVAC) 5538	Steel Erection — door & sash 5102	Steel Erection — inter., ornam. 5102	Steel Erection — structure 5040	Steel Erection — NOC 5057	Tile Work — (interior ceramic) 5348	Waterproofing 9014	Wrecking 5701	Boiler making 3726	Millwrights 3724	Structural Painters 5037	Elevator Constructor 5160	Truck Drivers 7219	Sprinkler Installer 5188
AL	54.71	10.34	12.52	12.52	40.75	21.56	12.35	9.27	40.75	11.93	12.83	55.64	10.09	23.31	8.40
AK	25.49	8.05	7.82	7.82	29.28	26.40	5.33	5.77	29.28	8.56	8.24	31.37	4.06	11.75	5.13
AZ	29.22	10.31	13.61	13.61	26.91	12.89	4.50	6.21	26.91	9.07	7.41	59.76	5.09	8.01	5.48
AR	16.03	4.74	8.34	8.34	15.40	11.28	6.69	2.58	15.40	4.94	5.76	25.69	2.73	10.96	5.72
CA	71.13	18.78	18.41	18.41	35.28	19.69	14.59	23.59	19.69	8.98	13.58	35.28	5.07	27.13	18.32
CO	15.60	4.16	5.36	5.36	23.64	10.59	4.10	3.23	18.40	4.37	3.87	22.88	2.78	7.22	3.85
CT	58.74	12.93	21.24	21.24	65.13	29.83	15.63	6.43	65.13	19.44	14.12	66.07	11.07	22.67	10.49
DE	26.71	5.55	13.16	13.16	23.27	13.16	8.00	11.53	23.27	6.17	6.19	23.27	6.19	11.13	6.60
DC	17.05	6.45	23.33	23.33	26.02	7.91	6.08	4.38	26.02	15.31	7.62	35.16	9.65	14.34	4.00
FL	18.17	7.69	9.91	9.91	23.04	12.59	5.63	5.26	23.04	9.07	6.05	39.44	3.54	9.24	6.41
GA	93.33	16.61	22.17	22.17	60.89	25.88	13.50	11.64	60.89	19.54	14.79	72.60	7.53	19.39	15.17
HI	17.24	4.93	7.60	7.60	21.77	6.88	6.52	5.40	21.77	4.82	7.71	24.83	2.28	10.54	3.49
ID	24.73	7.46	12.31	12.31	25.42	10.44	6.15	4.84	25.42	5.30	5.61	29.98	3.26	9.46	4.65
IL	47.55	15.21	31.16	31.16	84.68	19.36	27.09	7.88	84.68	23.23	15.10	101.23	14.42	19.73	16.65
IN	11.57	4.32	5.32	5.32	11.59	4.80	3.26	2.77	11.59	3.85	3.70	13.20	1.58	5.75	3.20
IA	28.01	8.53	9.15	9.15	52.79	14.30	9.38	6.15	25.61	14.19	8.59	87.69	6.14	13.60	7.75
KS	16.26	5.64	6.71	6.71	18.97	11.93	5.23	4.63	11.96	6.01	7.60	26.96	3.22	7.88	5.30
KY	34.00	12.00	11.72	11.72	36.00	11.02	16.73	3.50	36.00	12.15	8.35	150.00	9.56	10.00	10.32
LA	43.53	14.84	20.14	20.14	44.26	12.79	9.99	7.91	44.20	15.48	10.94	55.57	6.11	23.25	11.22
ME	22.72	6.77	8.92	8.92	37.18	12.21	5.76	4.64	37.18	8.08	6.58	54.29	4.39	8.15	6.70
MD	29.05	11.90	11.92	11.92	59.02	17.92	6.49	5.84	32.91	14.58	9.95	43.60	4.46	16.02	11.88
MA	30.99	5.72	6.89	6.89	54.08	33.00	5.81	2.48	23.75	15.42	5.98	23.51	4.21	8.28	4.13
MI	41.18	9.83	12.28	12.28	37.00	11.27	11.73	6.46	37.00	9.41	8.67	11.27	5.13	9.09	8.21
MN	67.71	17.30	9.82	9.82	108.16	7.70	14.69	7.95	7.70	10.92	12.24	36.60	6.41	11.39	7.62
MS	31.61	7.46	15.08	15.08	38.45	7.53	8.45	5.85	38.45	7.77	9.97	38.74	4.78	52.03	7.53
MO	36.73	8.64	12.33	12.33	47.55	24.29	10.41	5.92	47.55	14.45	9.66	60.85	6.20	12.44	8.43
MT	29.42	4.80	6.98	6.98	18.72	5.89	5.47	4.64	5.89	5.03	5.91	28.63	3.01	6.06	3.67
NE	35.08	12.88	14.80	14.80	59.03	14.13	8.68	6.73	67.83	16.33	11.35	66.18	7.13	15.98	10.30
NV	16.59	7.34	7.06	7.06	19.32	12.20	4.42	4.23	12.20	4.79	6.15	28.67	4.30	10.30	5.47
NH	36.82	8.93	14.28	14.28	95.03	28.57	12.35	7.17	95.03	8.91	9.04	54.18	6.29	36.82	10.68
NJ	40.10	7.22	12.87	12.87	17.25	13.36	9.55	6.63	16.86	4.18	9.20	23.37	7.00	15.75	5.89
NM	35.07	9.63	11.79	11.79	45.52	16.76	7.73	7.53	45.52	8.00	8.00	42.38	8.41	14.60	7.75
NY	35.96	13.56	19.25	19.25	35.26	19.08	10.35	7.49	18.10	21.41	10.22	42.40	12.20	14.37	6.45
NC	35.39	11.87	14.43	14.43	45.05	22.54	7.62	6.10	45.05	18.41	9.71	78.32	8.90	17.84	10.60
ND	17.63	6.11	10.59	10.59	10.90	10.59	10.50	17.63	8.18	3.33	10.50	10.59	3.33	8.79	6.11
OH	14.89	4.00	6.58	6.58	11.33	5.84	4.85	4.58	5.84	2.76	4.52	24.79	2.13	10.02	3.68
OK	22.44	9.62	10.98	10.98	29.21	15.15	6.69	6.41	32.94	9.25	6.21	52.38	3.88	11.26	6.40
OR	27.22	6.85	7.08	7.08	22.04	13.44	9.10	6.73	22.04	9.10	9.28	11.81	3.70	14.41	6.02
PA	38.35	8.92	19.10	19.10	30.01	19.10	11.69	16.04	30.01	7.95	8.85	30.01	8.85	16.69	9.19
RI	23.59	8.48	7.37	7.37	35.11	24.46	5.33	4.98	22.15	11.33	6.32	39.60	4.85	10.13	5.85
SC	46.45	10.88	15.24	15.24	31.33	24.73	7.98	5.42	31.33	11.24	10.59	66.07	8.64	15.07	10.12
SD	34.39	7.29	14.74	14.74	33.52	23.05	6.19	5.30	33.52	22.67	11.38	66.74	6.69	10.62	8.14
TN	29.78	8.13	13.42	13.42	16.07	18.88	7.46	4.09	16.07	8.10	7.46	40.34	4.92	10.23	6.10
TX	16.22	11.69	7.60	7.60	22.99	9.48	4.68	5.57	7.13	4.30	5.95	7.34	3.34	12.75	5.27
UT	23.93	5.78	5.71	5.71	24.61	11.81	5.75	4.31	20.14	5.91	4.77	21.36	3.71	7.05	4.16
VT	27.01	7.30	12.01	12.01	34.39	18.99	7.01	7.90	34.39	8.67	7.28	48.29	6.07	13.40	6.27
VA	25.97	5.47	7.46	7.46	29.39	10.80	5.76	3.30	29.39	4.92	7.38	27.90	5.39	9.03	5.30
WA	21.14	4.47	8.09	8.09	8.09	8.09	7.86	21.14	8.09	2.77	6.15	12.26	2.46	8.52	4.70
WV	19.62	5.62	7.13	7.13	19.39	9.55	4.86	3.11	20.70	5.62	6.64	35.86	4.23	8.93	3.76
WI	28.04	9.43	12.08	12.08	20.72	16.12	13.78	5.07	20.72	9.68	8.34	24.08	4.11	10.15	4.64
WY	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
AVG.	31.29	8.79	11.95	11.95	34.64	15.21	8.54	6.86	29.21	9.87	8.39	41.47	5.67	13.67	7.24

R013113-60 Workers' Compensation (cont.) (Canada in Canadian dollars)

Province		Alberta	British Columbia	Manitoba	Ontario	New Brunswick	Newfoundland & Labrador	Northwest Territories	Nova Scotia	Prince Edward Island	Quebec	Saskatchewan	Yukon
Carpentry—3 stories or less	Rate	5.71	3.27	3.98	4.55	3.17	7.81	4.99	6.85	6.42	12.03	3.43	6.63
	Code	42143	721028	40102	723	238130	4226	441	4226	403	80110	B1226	202
Carpentry—interior cab. work	Rate	1.89	2.80	3.98	4.55	3.17	4.07	4.99	5.87	3.94	12.03	3.43	6.63
	Code	42133	721021	40102	723	238350	4279	441	4274	402	80110	B1127	202
CARPENTRY—general	Rate	5.71	3.27	3.98	4.55	3.17	4.07	4.99	6.85	6.42	12.03	3.43	6.63
	Code	42143	721028	40102	723	238130	4299	441	4226	403	80110	B1202	202
CONCRETE WORK—NOC	Rate	3.88	3.57	6.50	18.31	3.17	7.81	4.99	5.75	3.94	1.92	2.99	6.63
	Code	42104	721010	40110	748	238110	4224	441	4224	402	80100	B1314	203
CONCRETE WORK—flat (flr. sidewalk)	Rate	3.88	3.57	6.50	18.31	3.17	7.81	4.99	5.75	3.94	11.92	2.99	6.63
	Code	42104	721010	40110	748	238110	4224	441	4224	402	80100	B1314	203
ELECTRICAL Wiring—inside	Rate	1.56	1.18	1.65	3.69	1.28	2.29	2.44	1.97	3.94	5.04	1.83	3.89
	Code	42124	721019	40203	704	238210	4261	446	4261	402	80170	B1105	206
EXCAVATION—earth NOC	Rate	1.86	3.79	4.00	5.29	3.17	2.93	3.88	3.89	3.94	6.40	2.19	3.89
	Code	40604	721031	40706	711	238190	4214	443	4214	402	80030	R1106	207
EXCAVATION—rock	Rate	1.86	3.79	4.00	5.29	3.17	2.93	3.88	3.89	3.94	6.40	2.19	3.89
	Code	40604	721031	40706	711	238190	4214	443	4214	402	80030	R1106	207
GLAZIERS	Rate	2.23	3.79	3.98	10.25	3.17	5.10	4.99	5.22	3.94	15.02	2.99	3.89
	Code	42121	715020	40109	751	238150	4233	441	4233	402	80150	B1304	212
INSULATION WORK	Rate	1.62	9.87	3.98	10.25	3.17	5.10	4.99	5.22	3.94	12.03	3.43	6.63
	Code	42184	721029	40102	751	238310	4234	441	4234	402	80110	B1207	202
LATHING	Rate	4.20	7.84	3.98	4.55	3.17	4.07	4.99	5.87	3.94	12.03	2.99	6.63
	Code	42135	721042	40102	723	238390	4279	441	4271	402	80110	B1316	202
MASONRY	Rate	3.88	3.30	3.98	12.70	3.17	5.10	4.99	5.22	3.94	11.92	2.99	6.63
	Code	42102	721037	40102	741	238140	4231	441	4231	402	80100	B1318	202
PAINTING & DECORATING	Rate	3.16	3.62	3.11	7.51	3.17	4.07	4.99	5.87	3.94	12.03	3.43	6.63
	Code	42111	721041	40105	719	238320	4275	441	4275	402	80110	B1201	202
PILE DRIVING	Rate	3.88	3.42	4.00	7.03	3.17	2.93	3.88	5.75	6.42	6.40	2.99	6.63
	Code	42159	722004	40706	732	238190	4129	443	4221	403	80030	B1310	202
PLASTERING	Rate	4.20	7.84	4.45	7.51	3.17	4.07	4.99	5.87	3.94	12.03	3.43	6.63
	Code	42135	721042	40108	719	238390	4271	441	4271	402	80110	B1221	202
PLUMBING	Rate	1.56	2.55	2.78	4.16	1.28	2.47	2.44	2.81	3.94	5.89	1.83	3.89
	Code	42122	721043	40204	707	238220	4241	446	4241	401	80160	B1101	214
ROOFING	Rate	4.71	5.42	7.22	14.80	3.17	7.81	4.99	9.43	3.94	18.52	2.99	6.63
	Code	42118	721036	40403	728	238150	4236	441	4236	402	80130	B1320	202
SHEET METAL WORK (HVAC)	Rate	1.56	2.55	7.22	4.16	1.28	2.47	2.44	2.81	3.94	5.89	1.83	3.89
	Code	42117	721043	40402	707	238220	4244	446	4244	401	80160	B1107	208
STEEL ERECTION—door & sash	Rate	1.62	10.62	6.82	18.31	3.17	7.81	4.99	5.22	3.94	16.70	2.99	6.63
	Code	42106	722005	40502	748	238120	4227	437	4227	402	80080	B1322	202
STEEL ERECTION—inter., ornam.	Rate	1.62	10.62	6.82	18.31	3.17	7.81	4.99	5.22	3.94	16.70	2.99	6.63
	Code	42106	722005	40502	748	238120	4227	441	4227	402	80080	B1322	202
STEEL ERECTION—structure	Rate	1.62	10.62	6.82	18.31	3.17	7.81	4.99	5.22	3.94	16.70	2.99	6.63
	Code	42106	722005	40502	748	238120	4227	441	4227	402	80080	B1322	202
STEEL ERECTION—NOC	Rate	1.62	10.62	6.82	18.31	3.17	7.81	4.99	5.22	3.94	16.70	2.99	6.63
	Code	42106	722005	40502	748	238120	4227	441	4227	402	80080	B1322	202
TILE WORK—inter. (ceramic)	Rate	3.02	3.65	1.86	7.51	3.17	4.07	4.99	5.87	3.94	12.03	2.99	6.63
	Code	42113	721054	40103	719	238340	4276	441	4276	402	80110	B1301	202
WATERPROOFING	Rate	3.16	3.62	3.98	4.55	3.17	4.07	4.99	5.22	3.94	18.52	3.13	6.63
	Code	42139	721016	40102	723	238190	4299	441	4239	402	80130	B1217	202
WRECKING	Rate	1.86	5.64	6.90	18.31	3.17	2.93	3.88	3.89	3.94	12.03	2.19	6.63
	Code	40604	721005	40106	748	238190	4211	443	4211	402	80110	R1125	202

General Requirements

R0131 Project Management & Coordination

R013113-80 Performance Bond

This table shows the cost of a performance bond for a construction job scheduled to be completed in 12 months. Add 1% of the premium cost per month for jobs requiring more than 12 months to complete. The rates are "standard" rates offered to contractors that the bonding company considers financially sound and capable of doing the work. Preferred rates

are offered by some bonding companies based upon financial strength of the contractor. Actual rates vary from contractor to contractor and from bonding company to bonding company. Contractors should prequalify through a bonding agency before submitting a bid on a contract that requires a bond.

Contract Amount	Building Construction Class B Projects	Highways & Bridges			
		Class A New Construction		Class A-1 Highway Resurfacing	
First \$ 100,000 bid	\$25.00 per M	\$15.00 per M		\$9.40 per M	
Next 400,000 bid	\$ 2,500 plus \$15.00 per M	\$ 1,500 plus \$10.00 per M		\$ 940 plus \$7.20 per M	
Next 2,000,000 bid	8,500 plus 10.00 per M	5,500 plus 7.00 per M		3,820 plus 5.00 per M	
Next 2,500,000 bid	28,500 plus 7.50 per M	19,500 plus 5.50 per M		15,820 plus 4.50 per M	
Next 2,500,000 bid	47,250 plus 7.00 per M	33,250 plus 5.00 per M		28,320 plus 4.50 per M	
Over 7,500,000 bid	64,750 plus 6.00 per M	45,750 plus 4.50 per M		39,570 plus 4.00 per M	

General Requirements

R0151 Temporary Utilities

R015113-65 Temporary Power Equipment

Cost data for the temporary equipment was developed utilizing the following information.

- | | |
|---|--|
| <ol style="list-style-type: none"> 1) Re-usable material-services, transformers, equipment and cords are based on new purchase and prorated to three projects. 2) PVC feeder includes trench and backfill. 3) Connections include disconnects and fuses. | <ol style="list-style-type: none"> 4) Labor units include an allowance for removal. 5) No utility company charges or fees are included. 6) Concrete pads or vaults are not included. 7) Utility company conduits not included. |
|---|--|

R015423-10 Steel Tubular Scaffolding

On new construction, tubular scaffolding is efficient up to 60' high or five stories. Above this it is usually better to use a hung scaffolding if construction permits. Swing scaffolding operations may interfere with tenants. In this case, the tubular is more practical at all heights.

In repairing or cleaning the front of an existing building the cost of tubular scaffolding per S.F. of building front increases as the height increases above the first tier. The first tier cost is relatively high due to leveling and alignment.

The minimum efficient crew for erecting and dismantling is three workers. They can set up and remove 18 frame sections per day up to 5 stories high. For 6 to 12 stories high, a crew of four is most efficient. Use two or more on top and two on the bottom for handing up or hoisting. They can

also set up and remove 18 frame sections per day. At 7' horizontal spacing, this will run about 800 S.F. per day of erecting and dismantling. Time for placing and removing planks must be added to the above. A crew of three can place and remove 72 planks per day up to 5 stories. For over 5 stories, a crew of four can place and remove 80 planks per day.

The table below shows the number of pieces required to erect tubular steel scaffolding for 1000 S.F. of building frontage. This area is made up of a scaffolding system that is 12 frames (11 bays) long by 2 frames high.

For jobs under twenty-five frames, add 50% to rental cost. Rental rates will be lower for jobs over three months duration. Large quantities for long periods can reduce rental rates by 20%.

Description of Component	Number of Pieces for	
	1000 S.F. of Building Front	Unit
5' Wide Standard Frame, 6'-4" High	24	Ea.
Leveling Jack & Plate	24	
Cross Brace	44	
Side Arm Bracket, 21"	12	
Guardrail Post	12	
Guardrail, 7' section	22	▼
Stairway Section	2	
Stairway Starter Bar	1	
Stairway Inside Handrail	2	
Stairway Outside Handrail	2	
Walk-Thru Frame Guardrail	2	

Scaffolding is often used as falsework over 15' high during construction of cast-in-place concrete beams and slabs. Two foot wide scaffolding is generally used for heavy beam construction. The span between frames depends upon the load to be carried with a maximum span of 5'.

Heavy duty shoring frames with a capacity of 10,000#/leg can be spaced up to 10' O.C. depending upon form support design and loading.

Scaffolding used as horizontal shoring requires less than half the material required with conventional shoring.

On new construction, erection is done by carpenters.

Rolling towers supporting horizontal shores can reduce labor and speed the job. For maintenance work, catwalks with spans up to 70' can be supported by the rolling towers.

R015423-20 Pump Staging

Pump staging is generally not available for rent. The table below shows the number of pieces required to erect pump staging for 2400 S.F. of building

frontage. This area is made up of a pump jack system that is 3 poles (2 bays) wide by 2 poles high.

Item	Number of Pieces for	
	2400 S.F. of Building Front	Unit
Aluminum pole section, 24' long	6	Ea.
Aluminum splice joint, 6' long	3	
Aluminum foldable brace	3	
Aluminum pump jack	3	
Aluminum support for workbench/back safety rail	3	▼
Aluminum scaffold plank/workbench, 14" wide x 24' long	4	
Safety net, 22' long	2	
Aluminum plank end safety rail	2	

The cost in place for this 2400 S.F. will depend on how many uses are realized during the life of the equipment.

R015433-10 Contractor Equipment

Rental Rates shown elsewhere in the book pertain to late model high quality machines in excellent working condition, rented from equipment dealers. Rental rates from contractors may be substantially lower than the rental rates from equipment dealers depending upon economic conditions; for older, less productive machines, reduce rates by a maximum of 15%. Any overtime must be added to the base rates. For shift work, rates are lower. Usual rule of thumb is 150% of one shift rate for two shifts; 200% for three shifts.

For periods of less than one week, operated equipment is usually more economical to rent than renting bare equipment and hiring an operator.

Costs to move equipment to a job site (mobilization) or from a job site (demobilization) are not included in rental rates, nor in any Equipment costs on any Unit Price line items or crew listings. These costs can be found elsewhere. If a piece of equipment is already at a job site, it is not appropriate to utilize mob/demob costs in an estimate again.

Rental rates vary throughout the country with larger cities generally having lower rates. Lease plans for new equipment are available for periods in excess of six months with a percentage of payments applying toward purchase.

Rental rates can also be treated as reimbursement costs for contractor-owned equipment. Owned equipment costs include depreciation, loan payments, interest, taxes, insurance, storage, and major repairs.

Crane Capacity	Hammer Type and Size		
	Air or Steam	Diesel	Vibratory
25 ton	to 8,750 ft.-lb.		70 H.P.
40 ton	15,000 ft.-lb.	to 32,000 ft.-lb.	170 H.P.
60 ton	25,000 ft.-lb.		300 H.P.
100 ton		112,000 ft.-lb.	

Cranes should be specified for the job by size, building and site characteristics, availability, performance characteristics, and duration of time required.

Backhoes & Shovels rent for about the same as equivalent size cranes but maintenance and operating expense is higher. Crane operators rate must be adjusted for high boom heights. Average adjustments: for 150' boom add 2% per hour; over 185', add 4% per hour; over 210', add 6% per hour; over 250', add 8% per hour and over 295', add 12% per hour.

Tower Cranes of the climbing or static type have jibs from 50' to 200' and capacities at maximum reach range from 4,000 to 14,000 pounds. Lifting capacities increase up to maximum load as the hook radius decreases.

Typical rental rates, based on purchase price are about 2% to 3% per month.

Erection and dismantling runs between 500 and 2000 labor hours. Climbing operation takes 10 labor hours per 20' climb. Crane dead time is about 5 hours per 40' climb. If crane is bolted to side of the building add cost of ties and extra mast sections. Climbing cranes have from 80' to 180' of mast while static cranes have 80' to 800' of mast.

Truck Cranes can be converted to tower cranes by using tower attachments. Mast heights over 400' have been used.

A single 100' high material **Hoist and Tower** can be erected and dismantled in about 400 labor hours; a double 100' high hoist and tower in about 600 labor hours. Erection times for additional heights are 3 and 4 labor hours

Monthly rental rates vary from 2% to 5% of the cost of the equipment depending on the anticipated life of the equipment and its wearing parts. Weekly rates are about 1/3 the monthly rates and daily rental rates about 1/3 the weekly rate.

The hourly operating costs for each piece of equipment include costs to the user such as fuel, oil, lubrication, normal expendables for the equipment, and a percentage of mechanic's wages chargeable to maintenance. The hourly operating costs listed do not include the operator's wages.

The daily cost for equipment used in the standard crews is figured by dividing the weekly rate by five, then adding eight times the hourly operating cost to give the total daily equipment cost, not including the operator. This figure is in the right hand column of the Equipment listings under Equipment Cost/Day.

Pile Driving rates shown for pile hammer and extractor do not include leads, crane, boiler or compressor. Vibratory pile driving requires an added field specialist during set-up and pile driving operation for the electric model. The hydraulic model requires a field specialist for set-up only. Up to 125 reuses of sheet piling are possible using vibratory drivers. For normal conditions, crane capacity for hammer type and size are as follows.

per vertical foot respectively up to 150', and 4 to 5 labor hours per vertical foot over 150' high. A 40' high portable Buck hoist takes about 160 labor hours to erect and dismantle. Additional heights take 2 labor hours per vertical foot to 80' and 3 labor hours per vertical foot for the next 100'. Most material hoists do not meet local code requirements for carrying personnel.

A 150' high **Personnel Hoist** requires about 500 to 800 labor hours to erect and dismantle. Budget erection time at 5 labor hours per vertical foot for all trades. Local code requirements or labor scarcity requiring overtime can add up to 50% to any of the above erection costs.

Earthmoving Equipment: The selection of earthmoving equipment depends upon the type and quantity of material, moisture content, haul distance, haul road, time available, and equipment available. Short haul cut and fill operations may require dozers only, while another operation may require excavators, a fleet of trucks, and spreading and compaction equipment. Stockpiled material and granular material are easily excavated with front end loaders. Scrapers are most economically used with hauls between 300' and 1-1/2 miles if adequate haul roads can be maintained. Shovels are often used for blasted rock and any material where a vertical face of 8' or more can be excavated. Special conditions may dictate the use of draglines, clamshells, or backhoes. Spreading and compaction equipment must be matched to the soil characteristics, the compaction required and the rate the fill is being supplied.

R015433-15 Heavy Lifting

Hydraulic Climbing Jacks

The use of hydraulic heavy lift systems is an alternative to conventional type crane equipment. The lifting, lowering, pushing, or pulling mechanism is a hydraulic climbing jack moving on a square steel jackrod from 1-5/8" to 4" square, or a steel cable. The jackrod or cable can be vertical or horizontal, stationary or movable, depending on the individual application. When the jackrod is stationary, the climbing jack will climb the rod and push or pull the load along with itself. When the climbing jack is stationary, the jackrod is movable with the load attached to the end and the climbing jack will lift or lower the jackrod with the attached load. The heavy lift system is normally operated by a single control lever located at the hydraulic pump.

The system is flexible in that one or more climbing jacks can be applied wherever a load support point is required, and the rate of lift synchronized.

Economic benefits have been demonstrated on projects such as: erection of ground assembled roofs and floors, complete bridge spans, girders and trusses, towers, chimney liners and steel vessels, storage tanks, and heavy machinery. Other uses are raising and lowering offshore work platforms, caissons, tunnel sections and pipelines.

R024119-10 Demolition Defined

Whole Building Demolition - Demolition of the whole building with no concern for any particular building element, component, or material type being demolished. This type of demolition is accomplished with large pieces of construction equipment that break up the structure, load it into trucks and haul it to a disposal site, but disposal or dump fees are not included. Demolition of below-grade foundation elements, such as footings, foundation walls, grade beams, slabs on grade, etc., is not included. Certain mechanical equipment containing flammable liquids or ozone-depleting refrigerants, electric lighting elements, communication equipment components, and other building elements may contain hazardous waste, and must be removed, either selectively or carefully, as hazardous waste before the building can be demolished.

Foundation Demolition - Demolition of below-grade foundation footings, foundation walls, grade beams, and slabs on grade. This type of demolition is accomplished by hand or pneumatic hand tools, and does not include saw cutting, or handling, loading, hauling, or disposal of the debris.

Gutting - Removal of building interior finishes and electrical/mechanical systems down to the load-bearing and sub-floor elements of the rough building frame, with no concern for any particular building element, component, or material type being demolished. This type of demolition is accomplished by hand or pneumatic hand tools, and includes loading into trucks, but not hauling, disposal or dump fees, scaffolding, or shoring. Certain mechanical equipment containing flammable liquids or ozone-depleting refrigerants, electric lighting elements, communication equipment components, and other building elements may contain hazardous waste, and must be removed, either selectively or carefully, as hazardous waste, before the building is gutted.

Selective Demolition - Demolition of a selected building element, component, or finish, with some concern for surrounding or adjacent elements, components, or finishes (see the first Subdivision (s) at the beginning of appropriate Divisions). This type of demolition is accomplished by hand or pneumatic hand tools, and does not include handling, loading,

storing, hauling, or disposal of the debris, scaffolding, or shoring. "Gutting" methods may be used in order to save time, but damage that is caused to surrounding or adjacent elements, components, or finishes may have to be repaired at a later time.

Careful Removal - Removal of a piece of service equipment, building element or component, or material type, with great concern for both the removed item and surrounding or adjacent elements, components or finishes. The purpose of careful removal may be to protect the removed item for later re-use, preserve a higher salvage value of the removed item, or replace an item while taking care to protect surrounding or adjacent elements, components, connections, or finishes from cosmetic and/or structural damage. An approximation of the time required to perform this type of removal is 1/3 to 1/2 the time it would take to install a new item of like kind (see Reference Number R220105-10). This type of removal is accomplished by hand or pneumatic hand tools, and does not include loading, hauling, or storing the removed item, scaffolding, shoring, or lifting equipment.

Cutout Demolition - Demolition of a small quantity of floor, wall, roof, or other assembly, with concern for the appearance and structural integrity of the surrounding materials. This type of demolition is accomplished by hand or pneumatic hand tools, and does not include saw cutting, handling, loading, hauling, or disposal of debris, scaffolding, or shoring.

Rubbish Handling - Work activities that involve handling, loading or hauling of debris. Generally, the cost of rubbish handling must be added to the cost of all types of demolition, with the exception of whole building demolition.

Minor Site Demolition - Demolition of site elements outside the footprint of a building. This type of demolition is accomplished by hand or pneumatic hand tools, or with larger pieces of construction equipment, and may include loading a removed item onto a truck (check the Crew for equipment used). It does not include saw cutting, hauling or disposal of debris, and, sometimes, handling or loading.

R024119-20 Dumpsters

Dumpster rental costs on construction sites are presented in two ways:

The cost per week rental includes the delivery of the dumpster; its pulling or emptying once per week, and its final removal. The assumption is made that the dumpster contractor could choose to empty a dumpster by simply bringing in an empty unit and removing the full one. These costs also include the disposal of the materials in the dumpster.

The alternate pricing can be used when actual planned conditions are not approximated by the weekly numbers. For example, these lines can be used when a dumpster is needed for 4 weeks and will need to be emptied 2 or 3 times per week. Conversely the alternate pricing lines can be used when a dumpster will be rented for several weeks or months but needs to be emptied only a few times over this period.

R024119-30 Rubbish Handling Chutes

To correctly estimate the cost of rubbish handling chute systems, the individual components must be priced separately. First choose the size of the system; a 30-inch diameter chute is quite common, but the sizes range from 18 to 36 inches in diameter. The 30-inch chute comes in a standard weight and two thinner weights. The thinner weight chutes are sometimes chosen for cost savings, but they are more easily damaged.

There are several types of major chute pieces that make up the chute system. The first component to consider is the top chute section (top intake hopper) where the material is dropped into the chute at the highest point. After determining the top chute, the intermediate chute pieces called the regular chute sections are priced. Next, the number of chute control door sections (intermediate intake hoppers) must be determined. In the more complex systems, a chute control door section is provided at each floor level. The last major component to consider is bolt down frames; these are usually provided at every other floor level.

There are a number of accessories to consider for safe operation and control. There are covers for the top chute and the chute door sections. The top

chute can have a trough that allows for better loading of the chute. For the safest operation, a chute warning light system can be added that will warn the other chute intake locations not to load while another is being used. There are dust control devices that spray a water mist to keep down the dust as the debris is loaded into a dumpster. There are special breakaway cords that are used to prevent damage to the chute if the dumpster is removed without disconnecting from the chute. There are chute liners that can be installed to protect the chute structure from physical damage from rough abrasive materials. Warning signs can be posted at each floor level that is provided with a chute control door section.

In summary, a complete rubbish handling chute system will include one top section, several intermediate regular sections, several intermediate control door (intake hopper) sections and bolt down frames at every other floor level starting with the top floor. If so desired, the system can also include covers and a light warning system for a safer operation. The bottom of the chute should always be above the Dumpster and should be tied off with a breakaway cord to the Dumpster.

R026510-20 Underground Storage Tank Removal

Underground storage tank removal can be divided into two categories: non-leaking and leaking. Prior to removing an underground storage tank, tests should be made, with the proper authorities present, to determine whether a tank has been leaking or the surrounding soil has been contaminated.

To safely remove liquid underground storage tanks:

1. Excavate to the top of the tank.
2. Disconnect all piping.
3. Open all tank vents and access ports.
4. Remove all liquids and/or sludge.
5. Purge the tank with an inert gas.
6. Provide access to the inside of the tank and clean out the interior using proper personal protective equipment (PPE).
7. Excavate soil surrounding the tank using proper PPE for on-site personnel.
8. Pull and properly dispose of the tank.
9. Clean up the site of all contaminated material.
10. Install new tanks or close the excavation.

R028213-20 Asbestos Removal Process

Asbestos removal is accomplished by a specialty contractor who understands the federal and state regulations regarding the handling and disposal of the material. The process of asbestos removal is divided into many individual steps. An accurate estimate can be calculated only after all the steps have been priced.

The steps are generally as follows:

1. Obtain an asbestos abatement plan from an industrial hygienist.
2. Monitor the air quality in and around the removal area and along the path of travel between the removal area and transport area. This establishes the background contamination.
3. Construct a two part decontamination chamber at entrance to removal area.
4. Install a HEPA filter to create a negative pressure in the removal area.
5. Install wall, floor and ceiling protection as required by the plan, usually 2 layers of fireproof 6 mil polyethylene.
6. Industrial hygienist visually inspects work area to verify compliance with plan.
7. Provide temporary supports for conduit and piping affected by the removal process.
8. Proceed with asbestos removal and bagging process. Monitor air quality as described in Step #2. Discontinue operations when contaminate levels exceed applicable standards.
9. Document the legal disposal of materials in accordance with EPA standards.
10. Thoroughly clean removal area including all ledges, crevices and surfaces.
11. Post abatement inspection by industrial hygienist to verify plan compliance.
12. Provide a certificate from a licensed industrial hygienist attesting that contaminate levels are within acceptable standards before returning area to regular use.

R028319-60 Lead Paint Remediation Methods

Lead paint remediation can be accomplished by the following methods.

1. Abrasive blast
2. Chemical stripping
3. Power tool cleaning with vacuum collection system
4. Encapsulation
5. Remove and replace
6. Enclosure

Each of these methods has strengths and weakness depending on the specific circumstances of the project. The following is an overview of each method.

1. **Abrasive blasting** is usually accomplished with sand or recyclable metallic blast. Before work can begin, the area must be contained to ensure the blast material with lead does not escape to the atmosphere. The use of vacuum blast greatly reduces the containment requirements. Lead abatement equipment that may be associated with this work includes a negative air machine. In addition, it is necessary to have an industrial hygienist monitor the project on a continual basis. When the work is complete, the spent blast sand with lead must be disposed of as a hazardous material. If metallic shot was used, the lead is separated from the shot and disposed of as hazardous material. Worker protection includes disposable clothing and respiratory protection.
2. **Chemical stripping** requires strong chemicals be applied to the surface to remove the lead paint. Before the work can begin, the area under/adjacent to the work area must be covered to catch the chemical and removed lead. After the chemical is applied to the painted surface it is usually covered with paper. The chemical is left in place for the specified period, then the paper with lead paint is pulled or scraped off. The process may require several chemical applications. The paper with chemicals and lead paint adhered to it, plus the containment and loose scrapings collected by a HEPA (high efficiency particulate air filter) vac, must be disposed of as a hazardous material. The chemical stripping process usually requires a neutralizing agent and several wash downs after the paint is removed. Worker protection includes a neoprene or other compatible protective clothing and respiratory protection with face shield. An industrial hygienist is required intermittently during the process.

3. **Power tool cleaning** is accomplished using shrouded needle blasting guns. The shrouding with different end configurations is held up against the surface to be cleaned. The area is blasted with hardened needles and the shroud captures the lead with a HEPA vac and deposits it in a holding tank. An industrial hygienist monitors the project, protective clothing and a respirator is required until air samples prove otherwise. When the work is complete the lead must be disposed of as a hazardous material.
4. **Encapsulation** is a method that leaves the well bonded lead paint in place after the peeling paint has been removed. Before the work can begin, the area under/adjacent to the work must be covered to catch the scrapings. The scraped surface is then washed with a detergent and rinsed. The prepared surface is covered with approximately 10 mils of paint. A reinforcing fabric can also be embedded in the paint covering. The scraped paint and containment must be disposed of as a hazardous material. Workers must wear protective clothing and respirators.
5. **Remove and replace** is an effective way to remove lead paint from windows, gypsum walls and concrete masonry surfaces. The painted materials are removed and new materials are installed. Workers should wear a respirator and tyvek suit. The demolished materials must be disposed of as hazardous waste if it fails the TCLP (toxicity characteristic leachate process) test.
6. **Enclosure** is the process that permanently seals lead painted materials in place. This process has many applications such as covering lead painted drywall with new drywall, covering exterior construction with tyvek paper then residing, or covering lead painted structural members with aluminum or plastic. The seams on all enclosing materials must be securely sealed. An industrial hygienist monitors the project, and protective clothing and a respirator is required until air samples prove otherwise.

All the processes require clearance monitoring and wipe testing as required by the hygienist.

R031113-10 Wall Form Materials**Aluminum Forms**

Approximate weight is 3 lbs. per S.F.C.A. Standard widths are available from 4" to 36" with 36" most common. Standard lengths of 2', 4', 6' to 8' are available. Forms are lightweight and fewer ties are needed with the wider widths. The form face is either smooth or textured.

Metal Framed Plywood Forms

Manufacturers claim over 75 reuses of plywood and over 300 reuses of steel frames. Many specials such as corners, fillers, pilasters, etc. are available. Monthly rental is generally about 15% of purchase price for first month and 9% per month thereafter with 90% of rental applied to purchase for the first month and decreasing percentages thereafter. Aluminum framed forms cost 25% to 30% more than steel framed.

After the first month, extra days may be prorated from the monthly charge. Rental rates do not include ties, accessories, cleaning, loss of hardware or freight in and out. Approximate weight is 5 lbs. per S.F. for steel; 3 lbs. per S.F. for aluminum.

Forms can be rented with option to buy.

Plywood Forms, Job Fabricated

There are two types of plywood used for concrete forms.

1. Exterior plyform which is completely waterproof. This is face oiled to facilitate stripping. Ten reuses can be expected with this type with 25 reuses possible.
2. An overlaid type consists of a resin fiber fused to exterior plyform. No oiling is required except to facilitate cleaning. This is available in both high density (HDO) and medium density overlaid (MDO). Using HDO, 50 reuses can be expected with 200 possible.

Plyform is available in 5/8" and 3/4" thickness. High density overlaid is available in 3/8", 1/2", 5/8" and 3/4" thickness.

5/8" thick is sufficient for most building forms, while 3/4" is best on heavy construction.

Plywood Forms, Modular, Prefabricated

There are many plywood forming systems without frames. Most of these are manufactured from 1-1/8" (HDO) plywood and have some hardware attached. These are used principally for foundation walls 8' or less high. With care and maintenance, 100 reuses can be attained with decreasing quality of surface finish.

Steel Forms

Approximate weight is 6-1/2 lbs. per S.F.C.A. including accessories. Standard widths are available from 2" to 24", with 24" most common. Standard lengths are from 2' to 8', with 4' the most common. Forms are easily ganged into modular units.

Forms are usually leased for 15% of the purchase price per month prorated daily over 30 days.

Rental may be applied to sale price, and usually rental forms are bought. With careful handling and cleaning 200 to 400 reuses are possible.

Straight wall gang forms up to 12' x 20' or 8' x 30' can be fabricated. These crane handled forms usually lease for approx. 9% per month.

Individual job analysis is available from the manufacturer at no charge.

R031113-30 Slipforms

The slipform method of forming may be used for forming circular silo and multi-celled storage bin type structures over 30' high, and building core shear walls over eight stories high. The shear walls, usually enclose elevator shafts, stairwells, mechanical spaces, and toilet rooms. Reuse of the form on duplicate structures will reduce the height necessary and spread the cost of building the form. Slipform systems can be used to cast chimneys, towers, piers, dams, underground shafts or other structures capable of being extruded.

Slipforms are usually 4' high and are raised semi-continuously by jacks climbing on rods which are embedded in the concrete. The jacks are powered by a hydraulic, pneumatic, or electric source and are available in 3, 6, and 22 ton capacities. Interior work decks and exterior scaffolds must be provided for placing inserts, embedded items, reinforcing steel, and

concrete. Scaffolds below the form for finishers may be required. The interior work decks are often used as roof slab forms on silos and bin work. Form raising rates will range from 6" to 20" per hour for silos; 6" to 30" per hour for buildings; and 6" to 48" per hour for shaft work.

Reinforcing bars and stressing strands are usually hoisted by crane or gin pole, and the concrete material can be hoisted by crane, winch-powered skip, or pumps. The slipform system is operated on a continuous 24-hour day when a monolithic structure is desired. For least cost, the system is operated only during normal working hours.

Placing concrete will range from 0.5 to 1.5 labor-hours per C.Y. Bucks, blockouts, keyways, weldplates, etc. are extra.

R031113-40 Forms for Reinforced Concrete**Design Economy**

Avoid many sizes in proportioning beams and columns.

From story to story avoid changing column dimensions. Gain strength by adding steel or using a richer mix. If a change in size of column is necessary, vary one dimension only to minimize form alterations. Keep beams and columns the same width.

From floor to floor in a multi-story building vary beam depth, not width, as that will leave slab panel form unchanged. It is cheaper to vary the strength of a beam from floor to floor by means of steel area than by 2" changes in either width or depth.

Cost Factors

Material includes the cost of lumber, cost of rent for metal pans or forms if used, nails, form ties, form oil, bolts and accessories.

Labor includes the cost of carpenters to make up, erect, remove and repair, plus common labor to clean and move. Having carpenters remove forms minimizes repairs.

Improper alignment and condition of forms will increase finishing cost. When forms are heavily oiled, concrete surfaces must be neutralized before finishing. Special curing compounds will cause spillages to spall off in first frost. Gang forming methods will reduce costs on large projects.

Materials Used

Boards are seldom used unless their architectural finish is required. Generally, steel, fiberglass and plywood are used for contact surfaces. Labor on plywood is 10% less than with boards. The plywood is backed up with

2 × 4's at 12" to 32" O.C. Walers are generally 2 - 2 × 4's. Column forms are held together with steel yokes or bands. Shoring is with adjustable shoring or scaffolding for high ceilings.

Reuse

Floor and column forms can be reused four or possibly five times without excessive repair. Remember to allow for 10% waste on each reuse.

When modular sized wall forms are made, up to twenty uses can be expected with exterior plyform.

When forms are reused, the cost to erect, strip, clean and move will not be affected. 10% replacement of lumber should be included and about one hour of carpenter time for repairs on each reuse per 100 S.F.

The reuse cost for certain accessory items normally rented on a monthly basis will be lower than the cost for the first use.

After fifth use, new material required plus time needed for repair prevent form cost from dropping further and it may go up. Much depends on care in stripping, the number of special bays, changes in beam or column sizes and other factors.

Costs for multiple use of formwork may be developed as follows:

$$\frac{(1\text{st Use} + \text{Reuse})}{2} = \text{avg. cost/2 uses}$$

$$\frac{(1\text{st Use} + 2 \text{ Reuse})}{3} = \text{avg. cost/3 uses}$$

$$\frac{(1\text{st use} + 3 \text{ Reuse})}{4} = \text{avg. cost/4 uses}$$

R031113-60 Formwork Labor-Hours

Item	Hours Required				Total Hours	Multiple Use		
	Unit	Fabricate	Erect & Strip	Clean & Move	1 Use	2 Use	3 Use	4 Use
Beam and Girder, interior beams, 12" wide	100 S.F.	6.4	8.3	1.3	16.0	13.3	12.4	12.0
Hung from steel beams		5.8	7.7	1.3	14.8	12.4	11.6	11.2
Beam sides only, 36" high		5.8	7.2	1.3	14.3	11.9	11.1	10.7
Beam bottoms only, 24" wide		6.6	13.0	1.3	20.9	18.1	17.2	16.7
Box out for openings		9.9	10.0	1.1	21.0	16.6	15.1	14.3
Buttress forms, to 8' high		6.0	6.5	1.2	13.7	11.2	10.4	10.0
Centering, steel, 3/4" rib lath				1.0	1.0			
3/8" rib lath or slab form	▼		0.9		0.9			
Chamfer strip or keyway	100 L.F.		1.5		1.5	1.5	1.5	1.5
Columns, fiber tube 8" diameter			20.6		20.6			
12"			21.3		21.3			
16"			22.9		22.9			
20"			23.7		23.7			
24"			24.6		24.6			
30"		▼		25.6		25.6		
Columns, round steel, 12" diameter	▼		22.0		22.0	22.0	22.0	22.0
16"			25.6		25.6	25.6	25.6	25.6
20"			30.5		30.5	30.5	30.5	30.5
24"		▼		37.7		37.7	37.7	37.7
Columns, plywood 8" x 8"	100 S.F.	7.0	11.0	1.2	19.2	16.2	15.2	14.7
12" x 12"		6.0	10.5	1.2	17.7	15.2	14.4	14.0
16" x 16"		5.9	10.0	1.2	17.1	14.7	13.8	13.4
24" x 24"		5.8	9.8	1.2	16.8	14.4	13.6	13.2
Columns, steel framed plywood 8" x 8"			10.0	1.0	11.0	11.0	11.0	11.0
12" x 12"			9.3	1.0	10.3	10.3	10.3	10.3
16" x 16"			8.5	1.0	9.5	9.5	9.5	9.5
24" x 24"			7.8	1.0	8.8	8.8	8.8	8.8
Drop head forms, plywood		9.0	12.5	1.5	23.0	19.0	17.7	17.0
Coping forms	▼	8.5	15.0	1.5	25.0	21.3	20.0	19.4
Culvert, box			14.5	4.3	18.8	18.8	18.8	18.8
Curb forms, 6" to 12" high, on grade		5.0	8.5	1.2	14.7	12.7	12.1	11.7
On elevated slabs		6.0	10.8	1.2	18.0	15.5	14.7	14.3
Edge forms to 6" high, on grade		100 L.F.	2.0	3.5	0.6	6.1	5.6	5.4
7" to 12" high		100 S.F.	2.5	5.0	1.0	8.5	7.8	7.5
Equipment foundations			10.0	18.0	2.0	30.0	25.5	24.0
Flat slabs, including drops	▼	3.5	6.0	1.2	10.7	9.5	9.0	8.8
Hung from steel		3.0	5.5	1.2	9.7	8.7	8.4	8.2
Closed deck for domes		3.0	5.8	1.2	10.0	9.0	8.7	8.5
Open deck for pans		2.2	5.3	1.0	8.5	7.9	7.7	7.6
Footings, continuous, 12" high		3.5	3.5	1.5	8.5	7.3	6.8	6.6
Spread, 12" high		4.7	4.2	1.6	10.5	8.7	8.0	7.7
Pile caps, square or rectangular		4.5	5.0	1.5	11.0	9.3	8.7	8.4
Grade beams, 24" deep	▼	2.5	5.3	1.2	9.0	8.3	8.0	7.9
Lintel or Sill forms		8.0	17.0	2.0	27.0	23.5	22.3	21.8
Spandrel beams, 12" wide		9.0	11.2	1.3	21.5	17.5	16.2	15.5
Stairs			25.0	4.0	29.0	29.0	29.0	29.0
Trench forms in floor		4.5	14.0	1.5	20.0	18.3	17.7	17.4
Walls, Plywood, at grade, to 8' high	▼	5.0	6.5	1.5	13.0	11.0	9.7	9.5
8' to 16'		7.5	8.0	1.5	17.0	13.8	12.7	12.1
16' to 20'		9.0	10.0	1.5	20.5	16.5	15.2	14.5
Foundation walls, to 8' high		4.5	6.5	1.0	12.0	10.3	9.7	9.4
8' to 16' high		5.5	7.5	1.0	14.0	11.8	11.0	10.6
Retaining wall to 12' high, battered		6.0	8.5	1.5	16.0	13.5	12.7	12.3
Radial walls to 12' high, smooth		8.0	9.5	2.0	19.5	16.0	14.8	14.3
2' chords		7.0	8.0	1.5	16.5	13.5	12.5	12.0
Prefabricated modular, to 8' high	▼	—	4.3	1.0	5.3	5.3	5.3	5.3
Steel to 8' high		—	6.8	1.2	8.0	8.0	8.0	8.0
8' to 16' high		—	9.1	1.5	10.6	10.3	10.2	10.2
Steel framed plywood to 8' high		—	6.8	1.2	8.0	7.5	7.3	7.2
8' to 16' high		—	9.3	1.2	10.5	9.5	9.2	9.0

R032110-10 Reinforcing Steel Weights and Measures

Bar Designation No. **	Nominal Weight Lb./Ft.	U.S. Customary Units			SI Units			
		Nominal Dimensions*			Nominal Dimensions*			
		Diameter in.	Cross Sectional Area, in. ²	Perimeter in.	Nominal Weight kg/m	Diameter mm	Cross Sectional Area, cm ²	Perimeter mm
3	.376	.375	.11	1.178	.560	9.52	.71	29.9
4	.668	.500	.20	1.571	.994	12.70	1.29	39.9
5	1.043	.625	.31	1.963	1.552	15.88	2.00	49.9
6	1.502	.750	.44	2.356	2.235	19.05	2.84	59.8
7	2.044	.875	.60	2.749	3.042	22.22	3.87	69.8
8	2.670	1.000	.79	3.142	3.973	25.40	5.10	79.8
9	3.400	1.128	1.00	3.544	5.059	28.65	6.45	90.0
10	4.303	1.270	1.27	3.990	6.403	32.26	8.19	101.4
11	5.313	1.410	1.56	4.430	7.906	35.81	10.06	112.5
14	7.650	1.693	2.25	5.320	11.384	43.00	14.52	135.1
18	13.600	2.257	4.00	7.090	20.238	57.33	25.81	180.1

* The nominal dimensions of a deformed bar are equivalent to those of a plain round bar having the same weight per foot as the deformed bar.

** Bar numbers are based on the number of eighths of an inch included in the nominal diameter of the bars.

R032110-20 Metric Rebar Specification - ASTM A615-81

Grade 300 (300 MPa* = 43,560 psi; +8.7% vs. Grade 40)				
Grade 400 (400 MPa* = 58,000 psi; -3.4% vs. Grade 60)				
Bar No.	Diameter mm	Area mm ²	Equivalent in. ²	Comparison with U.S. Customary Bars
10M	11.3	100	.16	Between #3 & #4
15M	16.0	200	.31	#5 (.31 in. ²)
20M	19.5	300	.47	#6 (.44 in. ²)
25M	25.2	500	.78	#8 (.79 in. ²)
30M	29.9	700	1.09	#9 (1.00 in. ²)
35M	35.7	1000	1.55	#11 (1.56 in. ²)
45M	43.7	1500	2.33	#14 (2.25 in. ²)
55M	56.4	2500	3.88	#18 (4.00 in. ²)

* MPa = megapascals

R032110-40 Weight of Steel Reinforcing Per Square Foot of Wall (PSF)

Reinforced weights: The table below suggests the weights per square foot for reinforcing steel in walls. Weights are approximate and will be the same

for all grades of steel bars. For bars in two directions, add weights for each size and spacing.

C/C Spacing in inches	Bar Size								
	#3 Wt. (PSF)	#4 Wt. (PSF)	#5 Wt. (PSF)	#6 Wt. (PSF)	#7 Wt. (PSF)	#8 Wt. (PSF)	#9 Wt. (PSF)	#10 Wt. (PSF)	#11 Wt. (PSF)
2"	2.26	4.01	6.26	9.01	12.27				
3"	1.50	2.67	4.17	6.01	8.18	10.68	13.60	17.21	21.25
4"	1.13	2.01	3.13	4.51	6.13	8.10	10.20	12.91	15.94
5"	.90	1.60	2.50	3.60	4.91	6.41	8.16	10.33	12.75
6"	.752	1.34	2.09	3.00	4.09	5.34	6.80	8.61	10.63
8"	.564	1.00	1.57	2.25	3.07	4.01	5.10	6.46	7.97
10"	.451	.802	1.25	1.80	2.45	3.20	4.08	5.16	6.38
12"	.376	.668	1.04	1.50	2.04	2.67	3.40	4.30	5.31
18"	.251	.445	.695	1.00	1.32	1.78	2.27	2.86	3.54
24"	.188	.334	.522	.751	1.02	1.34	1.70	2.15	2.66
30"	.150	.267	.417	.600	.817	1.07	1.36	1.72	2.13
36"	.125	.223	.348	.501	.681	.890	1.13	1.43	1.77
42"	.107	.191	.298	.429	.584	.753	.97	1.17	1.52
48"	.094	.167	.261	.376	.511	.668	.85	1.08	1.33

R032110-50 Minimum Wall Reinforcement Weight (PSF)

This table lists the approximate minimum wall reinforcement weights per S.F. according to the specification of .12% of gross area for vertical bars and .20% of gross area for horizontal bars.

Location	Wall Thickness	Bar Size	Horizontal Steel Spacing C/C	Sq. In. Req'd per S.F.	Total Wt. per S.F.	Bar Size	Vertical Steel Spacing C/C	Sq. In. Req'd per S.F.	Total Wt. per S.F.	Horizontal & Vertical Steel Total Weight per S.F.
Both Faces	10"	#4	18"	.24	.89#	#3	18"	.14	.50#	1.39#
	12"	#4	16"	.29	1.00	#3	16"	.17	.60	1.60
	14"	#4	14"	.34	1.14	#3	13"	.20	.69	1.84
	16"	#4	12"	.38	1.34	#3	11"	.23	.82	2.16
	18"	#5	17"	.43	1.47	#4	18"	.26	.89	2.36
One Face	6"	#3	9"	.15	.50	#3	18"	.09	.25	.75
	8"	#4	12"	.19	.67	#3	11"	.12	.41	1.08
	10"	#5	15"	.24	.83	#4	16"	.14	.50	1.34

R032110-70 Bend, Place, and Tie Reinforcing

Placing and tying by rodmen for footings and slabs runs from nine hrs. per ton for heavy bars to fifteen hrs. per ton for light bars. For beams, columns, and walls, production runs from eight hrs. per ton for heavy bars to twenty hrs. per ton for light bars. Overall average for typical reinforced concrete buildings is about fourteen hrs. per ton. These production figures include the time for placing of accessories and usual inserts, but not their material cost (allow 15% of the cost of delivered bent rods). Equipment

handling is necessary for the larger-sized bars so that installation costs for the very heavy bars will not decrease proportionately.

Installation costs for splicing reinforcing bars include allowance for equipment to hold the bars in place while splicing as well as necessary scaffolding for iron workers.

R032110-80 Shop-Fabricated Reinforcing Steel

The material prices for reinforcing, shown in the unit cost sections of the book, are for 50 tons or more of shop-fabricated reinforcing steel and include:

1. Mill base price of reinforcing steel
2. Mill grade/size/length extras
3. Mill delivery to the fabrication shop
4. Shop storage and handling
5. Shop drafting/detailing

6. Shop shearing and bending
7. Shop listing
8. Shop delivery to the job site

Both material and installation costs can be considerably higher for small jobs consisting primarily of smaller bars, while material costs may be slightly lower for larger jobs.

R032205-30 Common Stock Styles of Welded Wire Fabric

This table provides some of the basic specifications, sizes, and weights of welded wire fabric used for reinforcing concrete.

New Designation		Old Designation		Steel Area per Foot				Approximate Weight per 100 S.F.	
Spacing — Cross Sectional Area (in.) — (Sq. in. 100)		Spacing — Wire Gauge (in.) — (AS & W)		Longitudinal		Transverse		lbs	kg
				in.	cm	in.	cm		
Rolls	6 x 6 — W1.4 x W1.4	6 x 6 — 10 x 10	1	.028	.071	.028	.071	21	9.53
	6 x 6 — W2.0 x W2.0	6 x 6 — 8 x 8		.040	.102	.040	.102	29	13.15
	6 x 6 — W2.9 x W2.9	6 x 6 — 6 x 6		.058	.147	.058	.147	42	19.05
	6 x 6 — W4.0 x W4.0	6 x 6 — 4 x 4		.080	.203	.080	.203	58	26.91
	4 x 4 — W1.4 x W1.4	4 x 4 — 10 x 10	1	.042	.107	.042	.107	31	14.06
	4 x 4 — W2.0 x W2.0	4 x 4 — 8 x 8		.060	.152	.060	.152	43	19.50
	4 x 4 — W2.9 x W2.9	4 x 4 — 6 x 6		.087	.227	.087	.227	62	28.12
	4 x 4 — W4.0 x W4.0	4 x 4 — 4 x 4		.120	.305	.120	.305	85	38.56
Sheets	6 x 6 — W2.9 x W2.9	6 x 6 — 6 x 6	2	.058	.147	.058	.147	42	19.05
	6 x 6 — W4.0 x W4.0	6 x 6 — 4 x 4		.080	.203	.080	.203	58	26.31
	6 x 6 — W5.5 x W5.5	6 x 6 — 2 x 2		.110	.279	.110	.279	80	36.29
	4 x 4 — W1.4 x W1.4	4 x 4 — 4 x 4		.120	.305	.120	.305	85	38.56

NOTES: 1. Exact W—number size for 8 gauge is W2.1

2. Exact W—number size for 2 gauge is W5.4

R033053-50 Industrial Chimneys

Foundation requirements in C.Y. of concrete for various sized chimneys.

Size Chimney	2 Ton Soil	3 Ton Soil	Size Chimney	2 Ton Soil	3 Ton Soil	Size Chimney	2 Ton Soil	3 Ton Soil
75' x 3'-0"	13 C.Y.	11 C.Y.	160' x 6'-6"	86 C.Y.	76 C.Y.	300' x 10'-0"	325 C.Y.	245 C.Y.
85' x 5'-6"	19	16	175' x 7'-0"	108	95	350' x 12'-0"	422	320
100' x 5'-0"	24	20	200' x 6'-0"	125	105	400' x 14'-0"	520	400
125' x 5'-6"	43	36	250' x 8'-0"	230	175	500' x 18'-0"	725	575

R033105-10 Proportionate Quantities

The tables below show both quantities per S.F. of floor areas as well as form and reinforcing quantities per C.Y. Unusual structural requirements would increase the ratios below. High strength reinforcing would reduce the steel

weights. Figures are for 3000 psi concrete and 60,000 psi reinforcing unless specified otherwise.

Type of Construction	Live Load	Span	Per S.F. of Floor Area				Per C.Y. of Concrete		
			Concrete	Forms	Reinf.	Pans	Forms	Reinf.	Pans
Flat Plate	50 psf	15 Ft.	.46 C.F.	1.06 S.F.	1.71 lb.		62 S.F.	101 lb.	
		20	.63	1.02	2.40		44	104	
		25	.79	1.02	3.03		35	104	
	100	15	.46	1.04	2.14		61	126	
		20	.71	1.02	2.72		39	104	
		25	.83	1.01	3.47		33	113	
Flat Plate (waffle construction) 20" domes	50	20	.43	1.00	2.10	.84 S.F.	63	135	53 S.F.
		25	.52	1.00	2.90	.89	52	150	46
		30	.64	1.00	3.70	.87	42	155	37
	100	20	.51	1.00	2.30	.84	53	125	45
		25	.64	1.00	3.20	.83	42	135	35
		30	.76	1.00	4.40	.81	36	160	29
Waffle Construction 30" domes	50	25	.69	1.06	1.83	.68	42	72	40
		30	.74	1.06	2.39	.69	39	87	39
		35	.86	1.05	2.71	.69	33	85	39
		40	.78	1.00	4.80	.68	35	165	40
Flat Slab (two way with drop panels)	50	20	.62	1.03	2.34		45	102	
		25	.77	1.03	2.99		36	105	
		30	.95	1.03	4.09		29	116	
	100	20	.64	1.03	2.83		43	119	
		25	.79	1.03	3.88		35	133	
		30	.96	1.03	4.66		29	131	
	200	20	.73	1.03	3.03		38	112	
		25	.86	1.03	4.23		32	133	
		30	1.06	1.03	5.30		26	135	
One Way Joists 20" Pans	50	15	.36	1.04	1.40	.93	78	105	70
		20	.42	1.05	1.80	.94	67	120	60
		25	.47	1.05	2.60	.94	60	150	54
	100	15	.38	1.07	1.90	.93	77	140	66
		20	.44	1.08	2.40	.94	67	150	58
		25	.52	1.07	3.50	.94	55	185	49
One Way Joists 8" x 16" filler blocks	50	15	.34	1.06	1.80	.81 Ea.	84	145	64 Ea.
		20	.40	1.08	2.20	.82	73	145	55
		25	.46	1.07	3.20	.83	63	190	49
	100	15	.39	1.07	1.90	.81	74	130	56
		20	.46	1.09	2.80	.82	64	160	48
		25	.53	1.10	3.60	.83	56	190	42
One Way Beam & Slab	50	15	.42	1.30	1.73		84	111	
		20	.51	1.28	2.61		68	138	
		25	.64	1.25	2.78		53	117	
	100	15	.42	1.30	1.90		84	122	
		20	.54	1.35	2.69		68	154	
		25	.69	1.37	3.93		54	145	
	200	15	.44	1.31	2.24		80	137	
		20	.58	1.40	3.30		65	163	
		25	.69	1.42	4.89		53	183	
Two Way Beam & Slab	100	15	.47	1.20	2.26		69	130	
		20	.63	1.29	3.06		55	131	
		25	.83	1.33	3.79		43	123	
	200	15	.49	1.25	2.70		41	149	
		20	.66	1.32	4.04		54	165	
		25	.88	1.32	6.08		41	187	

R033105-10 Proportionate Quantities (cont.)

4000 psi Concrete and 60,000 psi Reinforcing—Form and Reinforcing Quantities per C.Y.

4000 psi Concrete and 60,000 psi Reinforcing—Form and Reinforcing Quantities per C.Y.						
Item	Size		Forms	Reinforcing	Minimum	Maximum
Columns (square tied)	10" x 10"		130 S.F.C.A.	#5 to #11	220 lbs.	875 lbs.
	12" x 12"		108	#6 to #14	200	955
	14" x 14"		92	#7 to #14	190	900
	16" x 16"		81	#6 to #14	187	1082
	18" x 18"		72	#6 to #14	170	906
	20" x 20"		65	#7 to #18	150	1080
	22" x 22"		59	#8 to #18	153	902
	24" x 24"		54	#8 to #18	164	884
	26" x 26"		50	#9 to #18	169	994
	28" x 28"		46	#9 to #18	147	864
	30" x 30"		43	#10 to #18	146	983
	32" x 32"		40	#10 to #18	175	866
	34" x 34"		38	#10 to #18	157	772
	36" x 36"		36	#10 to #18	175	852
	38" x 38"		34	#10 to #18	158	765
		40" x 40"		32 ▼	#10 to #18	143
Item	Size	Form	Spiral	Reinforcing	Minimum	Maximum
Columns (spirally reinforced)	12" diameter	34.5 L.F.	190 lbs.	#4 to #11	165 lbs.	1505 lb.
		34.5	190	#14 & #18	—	1100
	14"	25	170	#4 to #11	150	970
		25	170	#14 & #18	800	1000
	16"	19	160	#4 to #11	160	950
		19	160	#14 & #18	605	1080
	18"	15	100	#4 to #11	160	915
		15	100	#14 & #18	480	1075
	20"	12	100	#4 to #11	155	865
		12	100	#14 & #18	385	1020
	22"	10	120	#4 to #11	165	775
		10	120	#14 & #18	320	995
	24"	9	120	#4 to #11	195	800
		9	120	#14 & #18	290	1150
	26"	7.3	100	#4 to #11	200	729
		7.3	100	#14 & #18	235	1035
	28"	6.3	85	#4 to #11	175	700
		6.3	85	#14 & #18	200	1075
	30"	5.5	90	#4 to #11	180	670
		5.5	90	#14 & #18	175	1015
	32"	4.8	85	#4 to #11	185	615
		4.8	85	#14 & #18	155	955
	34"	4.3	85	#4 to #11	180	600
		4.3	85	#14 & #18	170	855
	36"	3.8	75	#4 to #11	165	570
		3.8	75	#14 & #18	155	865
	40"	3.0	70	#4 to #11	165	500
		3.0	70	#14 & #18	145	765

R033105-10 Proportionate Quantities (cont.)

3000 psi Concrete and 60,000 psi Reinforcing—Form and Reinforcing Quantities per C.Y.						
Item	Type	Loading	Height	C.Y./L.F.	Forms/C.Y.	Reinf./C.Y.
Retaining Walls	Cantilever	Level Backfill	4 Ft.	0.2 C.Y.	49 S.F.	35 lbs.
			8	0.5	42	45
			12	0.8	35	70
			16	1.1	32	85
			20	1.6	28	105
		Highway Surcharge	4	0.3	41	35
			8	0.5	36	55
			12	0.8	33	90
			16	1.2	30	120
			20	1.7	27	155
		Railroad Surcharge	4	0.4	28	45
			8	0.8	25	65
			12	1.3	22	90
			16	1.9	20	100
			20	2.6	18	120
	Gravity, with Vertical Face	Level Backfill	4	0.4	37	None
			7	0.6	27	
			10	1.2	20	
		Sloping Backfill	4	0.3	31	
			7	0.8	21	
			10	1.6	15	

Beams	Span	Live Load in Kips per Linear Foot							
		Under 1 Kip		2 to 3 Kips		4 to 5 Kips		6 to 7 Kips	
		Forms	Reinf.	Forms	Reinf.	Forms	Reinf.	Forms	Reinf.
	10 Ft.	—	—	90 S.F.	170 #	85 S.F.	175 #	75 S.F.	185 #
	16	130 S.F.	165 #	85	180	75	180	65	225
	20	110	170	75	185	62	200	51	200
	26	90	170	65	215	62	215	—	—
	30	85	175	60	200	—	—	—	—

Item	Size	Type	Forms per C.Y.	Reinforcing per C.Y.
Spread Footings	Under 1 C.Y.	1,000 psf soil	24 S.F.	44 lbs.
		5,000	24	42
		10,000	24	52
	1 C.Y. to 5 C.Y.	1,000	14	49
		5,000	14	50
		10,000	14	50
Pile Caps (30 Ton Concrete Piles)	Over 5 C.Y.	1,000	9	54
		5,000	9	52
		10,000	9	56
	Under 5 C.Y.	shallow caps	20	65
		medium	20	50
		deep	20	40
	5 C.Y. to 10 C.Y.	shallow	14	55
		medium	15	45
		deep	15	40
	10 C.Y. to 20 C.Y.	shallow	11	60
		medium	11	45
		deep	12	35
	Over 20 C.Y.	shallow	9	60
		medium	9	45
		deep	10	40

R033105-10 Proportionate Quantities (cont.)

3000 psi Concrete and 60,000 psi Reinforcing — Form and Reinforcing Quantities per C.Y.

Item	Size	Pile Spacing	50 T Pile	100 T Pile	50 T Pile	100 T Pile
Pile Caps (Steel H Piles)	Under 5 C.Y.	24" O.C.	24 S.F.	24 S.F.	75 lbs.	90 lbs.
		30"	25	25	80	100
		36"	24	24	80	110
	5 C.Y. to 10 C.Y.	24"	15	15	80	110
		30"	15	15	85	110
		36"	15	15	75	90
	Over 10 C.Y.	24"	13	13	85	90
		30"	11	11	85	95
		36"	10	10	85	90

	Height	8" Thick		10" Thick		12" Thick		15" Thick	
		Forms	Reinf.	Forms	Reinf.	Forms	Reinf.	Forms	Reinf.
Basement Walls	7 Ft.	81 S.F.	44 lbs.	65 S.F.	45 lbs.	54 S.F.	44 lbs.	41 S.F.	43 lbs.
	8		44		45		44		43
	9		46		45		44		43
	10		57		45		44		43
	12		83		50		52		43
	14		116		65		64		51
	16				86		90		65
	18						106		70

R033105-20 Materials for One C.Y. of Concrete

This is an approximate method of figuring quantities of cement, sand and coarse aggregate for a field mix with waste allowance included.

With crushed gravel as coarse aggregate, to determine barrels of cement required, divide 10 by total mix; that is, for 1:2:4 mix, 10 divided by 7 = 1-3/7 barrels.

If the coarse aggregate is crushed stone, use 10-1/2 instead of 10 as given for gravel.

To determine tons of sand required, multiply barrels of cement by parts of sand and then by 0.2; that is, for the 1:2:4 mix, as above, $1\frac{3}{7} \times 2 \times .2 = .57$ tons.

Tons of crushed gravel are in the same ratio to tons of sand as parts in the mix, or $\frac{4}{2} \times .57 = 1.14$ tons.

1 bag cement = 94#

1 C.Y. sand or crushed gravel = 2700#

1 C.Y. crushed stone = 2575#

4 bags = 1 barrel

1 ton sand or crushed gravel = 20 C.F.

1 ton crushed stone = 21 C.F.

Average carload of cement is 692 bags; of sand or gravel is 56 tons.

Do not stack stored cement over 10 bags high.

R033105-30 Metric Equivalents of Cement Content for Concrete Mixes

94 Pound Bags per Cubic Yard	Kilograms per Cubic Meter	94 Pound Bags per Cubic Yard	Kilograms per Cubic Meter
1.0	55.77	7.0	390.4
1.5	83.65	7.5	418.3
2.0	111.5	8.0	446.2
2.5	139.4	8.5	474.0
3.0	167.3	9.0	501.9
3.5	195.2	9.5	529.8
4.0	223.1	10.0	557.7
4.5	251.0	10.5	585.6
5.0	278.8	11.0	613.5
5.5	306.7	11.5	641.3
6.0	334.6	12.0	669.2
6.5	362.5	12.5	697.1

a. If you know the cement content in pounds per cubic yard,
multiply by .5933 to obtain kilograms per cubic meter.

b. If you know the cement content in 94 pound bags per cubic yard,
multiply by 55.77 to obtain kilograms per cubic meter.

R033105-40 Metric Equivalents of Common Concrete Strengths (to convert other psi values to megapascals, multiply by 0.006895)

U.S. Values psi	SI Value Megapascals	Non-SI Metric Value kgf/cm ² *
2000	14	140
2500	17	175
3000	21	210
3500	24	245
4000	28	280
4500	31	315
5000	34	350
6000	41	420
7000	48	490
8000	55	560
9000	62	630
10,000	69	705

* kilograms force per square centimeter

R033105-50 Quantities of Cement, Sand and Stone for One C.Y. of Concrete per Various Mixes

This table can be used to determine the quantities of the ingredients for smaller quantities of site mixed concrete.

Concrete (C.Y.)	Mix = 1:1:1-3/4			Mix = 1:2:2.25			Mix = 1:2.25:3			Mix = 1:3:4		
	Cement (sacks)	Sand (C.Y.)	Stone (C.Y.)	Cement (sacks)	Sand (C.Y.)	Stone (C.Y.)	Cement (sacks)	Sand (C.Y.)	Stone (C.Y.)	Cement (sacks)	Sand (C.Y.)	Stone (C.Y.)
1	10	.37	.63	7.75	.56	.65	6.25	.52	.70	5	.56	.74
2	20	.74	1.26	15.50	1.12	1.30	12.50	1.04	1.40	10	1.12	1.48
3	30	1.11	1.89	23.25	1.68	1.95	18.75	1.56	2.10	15	1.68	2.22
4	40	1.48	2.52	31.00	2.24	2.60	25.00	2.08	2.80	20	2.24	2.96
5	50	1.85	3.15	38.75	2.80	3.25	31.25	2.60	3.50	25	2.80	3.70
6	60	2.22	3.78	46.50	3.36	3.90	37.50	3.12	4.20	30	3.36	4.44
7	70	2.59	4.41	54.25	3.92	4.55	43.75	3.64	4.90	35	3.92	5.18
8	80	2.96	5.04	62.00	4.48	5.20	50.00	4.16	5.60	40	4.48	5.92
9	90	3.33	5.67	69.75	5.04	5.85	56.25	4.68	6.30	45	5.04	6.66
10	100	3.70	6.30	77.50	5.60	6.50	62.50	5.20	7.00	50	5.60	7.40
11	110	4.07	6.93	85.25	6.16	7.15	68.75	5.72	7.70	55	6.16	8.14
12	120	4.44	7.56	93.00	6.72	7.80	75.00	6.24	8.40	60	6.72	8.88
13	130	4.82	8.20	100.76	7.28	8.46	81.26	6.76	9.10	65	7.28	9.62
14	140	5.18	8.82	108.50	7.84	9.10	87.50	7.28	9.80	70	7.84	10.36
15	150	5.56	9.46	116.26	8.40	9.76	93.76	7.80	10.50	75	8.40	11.10
16	160	5.92	10.08	124.00	8.96	10.40	100.00	8.32	11.20	80	8.96	11.84
17	170	6.30	10.72	131.76	9.52	11.06	106.26	8.84	11.90	85	9.52	12.58
18	180	6.66	11.34	139.50	10.08	11.70	112.50	9.36	12.60	90	10.08	13.32
19	190	7.04	11.98	147.26	10.64	12.36	118.76	9.84	13.30	95	10.64	14.06
20	200	7.40	12.60	155.00	11.20	13.00	125.00	10.40	14.00	100	11.20	14.80
21	210	7.77	13.23	162.75	11.76	13.65	131.25	10.92	14.70	105	11.76	15.54
22	220	8.14	13.86	170.05	12.32	14.30	137.50	11.44	15.40	110	12.32	16.28
23	230	8.51	14.49	178.25	12.88	14.95	143.75	11.96	16.10	115	12.88	17.02
24	240	8.88	15.12	186.00	13.44	15.60	150.00	12.48	16.80	120	13.44	17.76
25	250	9.25	15.75	193.75	14.00	16.25	156.25	13.00	17.50	125	14.00	18.50
26	260	9.64	16.40	201.52	14.56	16.92	162.52	13.52	18.20	130	14.56	19.24
27	270	10.00	17.00	209.26	15.12	17.56	168.76	14.04	18.90	135	15.02	20.00
28	280	10.36	17.64	217.00	15.68	18.20	175.00	14.56	19.60	140	15.68	20.72
29	290	10.74	18.28	224.76	16.24	18.86	181.26	15.08	20.30	145	16.24	21.46

R033105-65 Field-Mix Concrete

Presently most building jobs are built with ready-mixed concrete except at isolated locations and some larger jobs requiring over 10,000 C.Y. where land is readily available for setting up a temporary batch plant.

The most economical mix is a controlled mix using local aggregate proportioned by trial to give the required strength with the least cost of material.

R033105-70 Placing Ready-Mixed Concrete

For ground pours allow for 5% waste when figuring quantities.

Prices in the front of the book assume normal deliveries. If deliveries are made before 8 A.M. or after 5 P.M. or on Saturday afternoons add 30%.

Negotiated discounts for large volumes are not included in prices in front of book.

For the lower floors without truck access, concrete may be wheeled in rubber-tired buggies, conveyer handled, crane handled or pumped. Pumping is economical if there is top steel. Conveyers are more efficient for thick slabs.

At higher floors the rubber-tired buggies may be hoisted by a hoisting tower and wheeled to location. Placement by a conveyer is limited to three floors

and is best for high-volume pours. Pumped concrete is best when building has no crane access. Concrete may be pumped directly as high as thirty-six stories using special pumping techniques. Normal maximum height is about fifteen stories.

Best pumping aggregate is screened and graded bank gravel rather than crushed stone.

Pumping downward is more difficult than pumping upward. Horizontal distance from pump to pour may increase preparation time prior to pour. Placing by cranes, either mobile, climbing or tower types, continues as the most efficient method for high-rise concrete buildings.

R033105-85 Lift Slabs

The cost advantage of the lift slab method is due to placing all concrete, reinforcing steel, inserts and electrical conduit at ground level and in reduction of formwork. Minimum economical project size is about 30,000 S.F. Slabs may be tilted for parking garage ramps.

It is now used in all types of buildings and has gone up to 22 stories high in apartment buildings. Current trend is to use post-tensioned flat plate slabs with spans from 22' to 35'. Cylindrical void forms are used when deep slabs are required. One pound of prestressing steel is about equal to seven pounds of conventional reinforcing.

To be considered cured for stressing and lifting, a slab must have attained 75% of design strength. Seven days are usually sufficient with four to five days possible if high early strength cement is used. Slabs can be stacked using two coats of a non-bonding agent to insure that slabs do not stick to each other. Lifting is done by companies specializing in this work. Lift rate is 5' to 15' per hour with an average of 10' per hour. Total areas up to 33,000 S.F. have been lifted at one time. 24 to 36 jacking columns are common. Most economical bay sizes are 24' to 28' with four to fourteen stories most efficient. Continuous design reduces reinforcing steel cost. Use of post-tensioned slabs allows larger bay sizes.

R033543-10 Polished Concrete Floors

A polished concrete floor has a glossy mirror-like appearance and is created by grinding the concrete floor with finer and finer diamond grits, similar to sanding wood, until the desired level of reflective clarity and sheen are achieved. The technical term for this type of polished concrete is bonded abrasive polished concrete. The basic piece of equipment used in the polishing process is a walk-behind planetary grinder for working large floor areas. This grinder drives diamond-impregnated abrasive discs, which progress from coarse- to fine-grit discs.

The process begins with the use of very coarse diamond segments or discs bonded in a metallic matrix. These segments are coarse enough to allow the removal of pits, blemishes, stains, and light coatings from the floor surface in preparation for final smoothing. The condition of the original concrete surface will dictate the grit coarseness of the initial grinding step which will generally end up being a three- to four-step process using ever finer grits. The purpose of this initial grinding step is to remove surface coatings and blemishes and to cut down into the cream for very fine aggregate exposure, or deeper into the fine aggregate layer just below the cream layer, or even deeper into the coarse aggregate layer. These initial grinding steps will progress up to the 100/120 grit. If wet grinding is done, a waste slurry is produced that must be removed between grit changes and disposed of properly. If dry grinding is done, a high performance vacuum will pick up the dust during grinding and collect it in bags which must be disposed of properly.

The process continues with honing the floor in a series of steps that progress from 100-grit to 400-grit diamond abrasive discs embedded in a plastic or resin matrix. At some point during, or just prior to, the honing step, one or two coats of stain or dye can be sprayed onto the surface to give color to the concrete, and two coats of densifier/hardener must be applied to the floor surface and allowed to dry. This sprayed-on densifier/hardener will penetrate about 1/8" into the concrete to make the surface harder, denser and more abrasion-resistant.

The process ends with polishing the floor surface in a series of steps that progress from resin-impregnated 800-grit (medium polish) to 1500-grit (high polish) to 3000-grit (very high polish), depending on the desired level of reflective clarity and sheen.

The Concrete Polishing Association of America (CPAA) has defined the flooring options available when processing concrete to a desired finish. The first category is aggregate exposure, the grinding of a concrete surface with bonded abrasives, in as many abrasive grits necessary, to achieve one of the following classes:

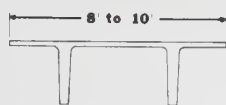
- A. Cream – very little surface cut depth; little aggregate exposure
- B. Fine aggregate (salt and pepper) – surface cut depth of 1/16"; fine aggregate exposure with little or no medium aggregate exposure at random locations
- C. Medium aggregate – surface cut depth of 1/8"; medium aggregate exposure with little or no large aggregate exposure at random locations
- D. Large aggregate – surface cut depth of 1/4"; large aggregate exposure with little or no fine aggregate exposure at random locations

The second CPAA defined category is reflective clarity and sheen, the polishing of a concrete surface with the minimum number of bonded abrasives as indicated to achieve one of the following levels:

1. Ground – flat appearance with none to very slight diffused reflection; none to very low reflective sheen; using a minimum total of 4 grit levels up to 100-grit
2. Honed – matte appearance with or without slight diffused reflection; low to medium reflective sheen; using a minimum total of 5 grit levels up to 400-grit
3. Semi-polished – objects being reflected are not quite sharp and crisp but can be easily identified; medium to high reflective sheen; using a minimum total of 6 grit levels up to 800-grit
4. Highly-polished – objects being reflected are sharp and crisp as would be seen in a mirror-like reflection; high to highest reflective sheen; using a minimum total of up to 8 grit levels up to 1500-grit or 3000-grit

The CPAA defines reflective clarity as the degree of sharpness and crispness of the reflection of overhead objects when viewed 5' above and perpendicular to the floor surface; and reflective sheen as the degree of gloss reflected from a surface when viewed at least 20' from and at an angle to the floor surface. These terms are relatively subjective. The final outcome depends on the internal makeup and surface condition of the original concrete floor, the experience of the floor polishing crew, and expectations of the owner. Before the grinding, honing, and polishing work commences on the main floor area, it might be beneficial to do a mock-up panel in the same floor but in an out of the way place to demonstrate the sequence of steps with increasingly fine abrasive grits and to demonstrate the final reflective clarity and reflective sheen. This mock-up panel will be within the area of, and part of, the final work.

R034105-30 Prestressed Precast Concrete Structural Units

Type	Location	Depth	Span in Ft.		Live Load Lb. per S.F.
Double Tee 	Floor	28" to 34"	60 to 80		50 to 80
	Roof	12" to 24"	30 to 50		40
	Wall	Width 8'	Up to 55' high		Wind
Multiple Tee  Plank  or 	Roof	8" to 12"	15 to 40		40
	Floor	8" to 12"	15 to 30		100
	Roof	or	4" 6" 8" 10" 12"	Roof	Floor
Floor	13			12	
	22			18	
	26			25	
	33			29	
42	32				
Single Tee 	Roof	28"	40		40
		32"	80		
		36"	100		
		48"	120		
AASHTO Girder 	Bridges	Type 4	100		Highway
		5	110		
		6	125		
Box Beam 	Bridges	15"	40		Highway
		27"	to		
		33"	100		

The majority of precast projects today utilize double tees rather than single tees because of speed and ease of installation. As a result casting beds at manufacturing plants are normally formed for double tees. Single tee projects will therefore require an initial set up charge to be spread over the individual single tee costs.

For floors, a 2" to 3" topping is field cast over the shapes. For roofs, insulating concrete or rigid insulation is placed over the shapes.

Member lengths up to 40' are standard haul, 40' to 60' require special permits and lengths over 60' must be escorted. Over width and/or over length can add up to 100% on hauling costs.

Large heavy members may require two cranes for lifting which would increase erection costs by about 45%. An eight man crew can install 12 to 20 double tees, or 45 to 70 quad tees or planks per day.

Grouting of connections must also be included.

Several system buildings utilizing precast members are available. Heights can go up to 22 stories for apartment buildings. Optimum design ratio is 3 S.F. of surface to 1 S.F. of floor area.

R034136-90 Prestressed Concrete, Post-Tensioned

In post-tensioned concrete the steel tendons are tensioned after the concrete has reached about 3/4 of its ultimate strength. The cableways are grouted after tensioning to provide bond between the steel and concrete. If bond is to be prevented, the tendons are coated with a corrosion-preventative grease and wrapped with waterproofed paper or plastic. Bonded tendons are usually used when ultimate strength (beams & girders) are controlling factors.

High strength concrete is used to fully utilize the steel, thereby reducing the size and weight of the member. A plasticizing agent may be added to reduce water content. Maximum size aggregate ranges from 1/2" to 1-1/2" depending on the spacing of the tendons.

The types of steel commonly used are bars and strands. Job conditions determine which is best suited. Bars are best for vertical prestresses since

they are easy to support. The trend is for steel manufacturers to supply a finished package, cut to length, which reduces field preparation to a minimum.

Bars vary from 3/4" to 1-3/8" diameter. Table below gives time in labor-hours per tendon for placing, tensioning and grouting (if required) a 75' beam. Tendons used in buildings are not usually grouted; tendons for bridges usually are grouted. For strands the table indicates the labor-hours per pound for typical prestressed units 100' long. Simple span beams usually require one-end stressing regardless of lengths. Continuous beams are usually stressed from two ends. Long slabs are poured from the center outward and stressed in 75' increments after the initial 150' center pour.

Labor Hours per Tendon and per Pound of Prestressed Steel						
Length	100' Beam		75' Beam		100' Slab	
Type Steel	Strand		Bars		Strand	
Diameter	0.5"		3/4"	1-3/8"	0.5"	0.6"
Number	4	12	1	1	1	1
Force in Kips	100	300	42	143	25	35
Preparation & Placing Cables	3.6	7.4	0.9	2.9	0.9	1.1
Stressing Cables	2.0	2.4	0.8	1.6	0.5	0.5
Grouting, if required	2.5	3.0	0.6	1.3		
Total Labor Hours	8.1	12.8	2.3	5.8	1.4	1.6
Prestressing Steel Weights (Lbs.)	215	640	115	380	53	74
Labor-hours per Lb. Bonded	0.038	0.020	0.020	0.015	0.026	0.022
Non-bonded						

Flat slab construction — 4000 psi concrete with span-to-depth ratio between 36 and 44. Two way post-tensioned steel averages 1.0 lb. per S.F. for 24' to 28' bays (usually strand) and additional reinforcing steel averages .5 lb. per S.F.

Pan and joist construction — 4000 psi concrete with span-to-depth ratio 28 to 30. Post-tensioned steel averages .8 lb. per S.F. and reinforcing steel about 1.0 lb. per S.F. Placing and stressing averages 40 hours per ton of total material.

Beam construction — 4000 to 5000 psi concrete. Steel weights vary greatly.

Labor cost per pound goes down as the size and length of the tendon increase. The primary economic consideration is the cost per kip for the member.

Post-tensioning becomes feasible for beams and girders over 30' long; for continuous two-way slabs over 20' clear; also in transferring upper building loads over longer spans at lower levels. Post-tension suppliers will provide engineering services at no cost to the user. Substantial economies are possible by using post-tensioned lift slabs.

R034513-10 Precast Concrete Wall Panels

Panels are either solid or insulated with plain, colored or textured finishes. Transportation is an important cost factor. Prices shown in the unit cost section of the book are based on delivery within 50 miles of a plant including fabricators' overhead and profit. Engineering data is available from fabricators to assist with construction details. Usual minimum job size for economical use of panels is about 5000 S.F. Small jobs can double the prices shown. For large, highly repetitive jobs, deduct up to 15% from the prices shown.

2" thick panels cost about the same as 3" thick panels, and maximum panel size is less. For building panels faced with granite, marble or stone, add the material prices from those unit cost sections to the plain panel price shown. There is a growing trend toward aggregate facings and broken rib finish rather than plain gray concrete panels.

No allowance has been made in the unit cost section for supporting steel framework. On one story buildings, panels may rest on grade beams and require only wind bracing and fasteners. On multi-story buildings panels can span from column to column and floor to floor. Plastic-designed steel-framed structures may have large deflections which slow down erection and raise costs.

Large panels are more economical than small panels on a S.F. basis. When figuring areas include all protrusions, returns, etc. Overhangs can triple erection costs. Panels over 45' have been produced. Larger flat units should be prestressed. Vacuum lifting of smooth finish panels eliminates inserts and can speed erection.

Concrete

R0347 Site-Cast Concrete**R034713-20 Tilt Up Concrete Panels**

The advantage of tilt up construction is in the low cost of forms and the placing of concrete and reinforcing. Panels up to 75' high and 5-1/2" thick have been tilted using strongbacks. Tilt up has been used for one to five story buildings and is well-suited for warehouses, stores, offices, schools and residences.

The panels are cast in forms on the floor slab. Most jobs use 5-1/2" thick solid reinforced concrete panels. Sandwich panels with a layer of insulating materials are also used. Where dampness is a factor, lightweight aggregate is used. Optimum panel size is 300 to 500 S.F.

Slabs are usually poured with 3000 psi concrete which permits tilting seven days after pouring. Slabs may be stacked on top of each other and are separated from each other by either two coats of bond breaker or a film of polyethylene. Use of high early-strength cement allows tilting two days after a pour. Tilting up is done with a roller outrigger crane with a capacity of at least 1-1/2 times the weight of the panel at the required reach.

Exterior precast columns can be set at the same time as the panels; interior precast columns can be set first and the panels clipped directly to them. The use of cast-in-place concrete columns is diminishing due to shrinkage problems. Structural steel columns are sometimes used if crane rails are planned. Panels can be clipped to the columns or lowered between the flanges. Steel channels with anchors may be used as edge forms for the slab. When the panels are lifted the channels form an integral steel column to take structural loads. Roof loads can be carried directly by the panels for wall heights to 14'.

Requirements of local building codes may be a limiting factor and should be checked. Building floor slabs should be poured first and should be a minimum of 5" thick with 100% compaction of soil or 6" thick with less than 100% compaction.

Setting times as fast as nine minutes per panel have been observed, but a safer expectation would be four panels per hour with a crane and a four-man setting crew. If crane erects from inside building, some provision must be made to get crane out after walls are erected. Good yarding procedure is important to minimize delays. Equalizing three-point lifting beams and self-releasing pick-up hooks speed erection. If panels must be carried to their final location, setting time per panel will be increased and erection costs may approach the erection cost range of architectural precast wall panels. Placing panels into slots formed in continuous footers will speed erection.

Reinforcing should be with #5 bars with vertical bars on the bottom. If surface is to be sandblasted, stainless steel chairs should be used to prevent rust staining.

Use of a broom finish is popular since the unavoidable surface blemishes are concealed.

Precast columns run from three to five times the C.Y. price of the panels only.

Concrete

R0352 Lightweight Concrete Roof Insulation**R035216-10 Lightweight Concrete**

Lightweight aggregate concrete is usually purchased ready mixed, but it can also be field mixed.

Vermiculite or Perlite comes in bags of 4 C.F. under various trade names. Weight is about 8 lbs. per C.F. For insulating roof fill use 1:6 mix. For structural deck use 1:4 mix over gypsum boards, steeltex, steel centering, etc., supported by closely spaced joists or bulb tees. For structural slabs use 1:3:2 vermiculite sand concrete over steeltex, metal lath, steel centering, etc., on joists spaced 2'-0" O.C. for maximum L.L. of 80 P.S.F. Use same mix

for slab base fill over steel flooring or regular reinforced concrete slab when tile, terrazzo or other finish is to be laid over.

For slabs on grade use 1:3:2 mix when tile, etc., finish is to be laid over. If radiant heating units are installed use a 1:6 mix for a base. After coils are in place, cover with a regular granolithic finish (mix 1:3:2) to a minimum depth of 1-1/2" over top of units.

Reinforce all slabs with 6 x 6 or 10 x 10 welded wire mesh.

R040130-10 Cleaning Face Brick

On smooth brick a person can clean 70 S.F. an hour; on rough brick 50 S.F. per hour. Use one gallon muriatic acid to 20 gallons of water for 1000

S.F. Do not use acid solution until wall is at least seven days old, but a mild soap solution may be used after two days.

Time has been allowed for cleanup in brick prices.

Masonry

R0405 Common Work Results for Masonry

R040513-10 Cement Mortar (material only)

Type N - 1:1:6 mix by volume. Use everywhere above grade except as noted below. - 1:3 mix using conventional masonry cement which saves handling two separate bagged materials.

Type M - 1:1/4:3 mix by volume, or 1 part cement, 1/4 (10% by wt.) lime, 3 parts sand. Use for heavy loads and where earthquakes or hurricanes may occur. Also for reinforced brick, sewers, manholes and everywhere below grade.

Mix Proportions by Volume and Compressive Strength of Mortar

Where Used	Allowable Proportions by Volume					Compressive Strength @ 28 days
	Mortar Type	Portland Cement	Masonry Cement	Hydrated Lime	Masonry Sand	
Plain Masonry	M	1	1	—	6	2500 psi
		1	—	1/4	3	
	S	1/2	1	—	4	1800 psi
		1	—	1/4 to 1/2	4	
	N	—	1	—	3	750 psi
		1	—	1/2 to 1-1/4	6	
Reinforced Masonry	O	—	1	—	3	350 psi
	K	1	—	1-1/4 to 2-1/2	9	75 psi
		1	—	2-1/2 to 4	12	
	PM	1	1	—	6	2500 psi
	PL	1	—	1/4 to 1/2	4	2500 psi

Note: The total aggregate should be between 2.25 to 3 times the sum of the cement and lime used.

The labor cost to mix the mortar is included in the productivity and labor cost of unit price lines in unit cost sections for brickwork, blockwork and stonework.

The material cost of mixed mortar is included in the material cost of those same unit price lines and includes the cost of renting and operating a 10 C.F. mixer at the rate of 200 C.F. per day.

There are two types of mortar color used. One type is the inert additive type with about 100 lbs. per M brick as the typical quantity required. These colors are also available in smaller-batch-sized bags (1 lb. to 15 lb.) which can be placed directly into the mixer without measuring. The other type is premixed and replaces the masonry cement. Dark green color has the highest cost.

R040519-50 Masonry Reinforcing

Horizontal joint reinforcing helps prevent wall cracks where wall movement may occur and in many locations is required by code. Horizontal joint reinforcing is generally not considered to be structural reinforcing and an unreinforced wall may still contain joint reinforcing.

Reinforcing strips come in 10' and 12' lengths and in truss and ladder shapes, with and without drips. Field labor runs between 2.7 to 5.3 hours per 1000 L.F. for wall thicknesses up to 12".

The wire meets ASTM A82 for cold drawn steel wire and the typical size is 9 ga. sides and ties with 3/16" diameter also available. Typical finish is mill galvanized with zinc coating at .10 oz. per S.F. Class I (.40 oz. per S.F.) and Class III (.80 oz per S.F.) are also available, as is hot dipped galvanizing at 1.50 oz. per S.F.

R042110-10 Economy in Bricklaying

Have adequate supervision. Be sure bricklayers are always supplied with materials so there is no waiting. Place best bricklayers at corners and openings.

Use only screened sand for mortar. Otherwise, labor time will be wasted picking out pebbles. Use seamless metal tubs for mortar as they do not leak or catch the trowel. Locate stack and mortar for easy wheeling.

Have brick delivered for stacking. This makes for faster handling, reduces chipping and breakage, and requires less storage space. Many dealers will deliver select common in 2' x 3' x 4' pallets or face brick packaged. This affords quick handling with a crane or forklift and easy tonging in units of ten, which reduces waste.

Use wider bricks for one wythe wall construction. Keep scaffolding away from wall to allow mortar to fall clear and not stain wall.

On large jobs develop specialized crews for each type of masonry unit.

Consider designing for prefabricated panel construction on high rise projects.

Avoid excessive corners or openings. Each opening adds about 50% to labor cost for area of opening.

Bolting stone panels and using window frames as stops reduces labor costs and speeds up erection.

R042110-20 Common and Face Brick

Common building brick manufactured according to ASTM C62 and facing brick manufactured according to ASTM C216 are the two standard bricks available for general building use.

Building brick is made in three grades; SW, where high resistance to damage caused by cyclic freezing is required; MW, where moderate resistance to cyclic freezing is needed; and NW, where little resistance to cyclic freezing is needed. Facing brick is made in only the two grades SW and MW. Additionally, facing brick is available in three types; FBS, for general use; FBX, for general use where a higher degree of precision and lower permissible variation in size than FBS is needed; and FBA, for general use to produce characteristic architectural effects resulting from non-uniformity in size and texture of the units.

In figuring the material cost of brickwork, an allowance of 25% mortar waste and 3% brick breakage was included. If bricks are delivered palletized

with 280 to 300 per pallet, or packaged, allow only 1-1/2% for breakage.

Packaged or palletized delivery is practical when a job is big enough to have a crane or other equipment available to handle a package of brick. This is so on all industrial work but not always true on small commercial buildings.

The use of buff and gray face is increasing, and there is a continuing trend to the Norman, Roman, Jumbo and SCR brick.

Common red clay brick for backup is not used that often. Concrete block is the most usual backup material with occasional use of sand lime or cement brick. Building brick is commonly used in solid walls for strength and as a fire stop.

Brick panels built on the ground and then crane erected to the upper floors have proven to be economical. This allows the work to be done under cover and without scaffolding.

R042110-50 Brick, Block & Mortar Quantities

Running Bond						For Other Bonds Standard Size Add to S.F. Quantities in Table to Left				
Number of Brick per S.F. of Wall - Single Wythe with 3/8" Joints				C.F. of Mortar per M Bricks, Waste Included						
Type Brick	Nominal Size (incl. mortar) L H W			Modular Coursing	Number of Brick per S.F.			Bond Type	Description	Factor
						3/8" Joint	1/2" Joint			
Standard	8 x 2-2/3 x 4			3C=8"	6.75	10.3	12.9	Common	full header every fifth course	+20%
Economy	8 x 4 x 4			1C=4"	4.50	11.4	14.6		full header every sixth course	+16.7%
Engineer	8 x 3-1/5 x 4			5C=16"	5.63	10.6	13.6	English	full header every second course	+50%
Fire	9 x 2-1/2 x 4-1/2			2C=5"	6.40	550 # Fireclay	—	Flemish	alternate headers every course	+33.3%
Jumbo	12 x 4 x 6 or 8			1C=4"	3.00				23.8	30.8
Norman	12 x 2-2/3 x 4			3C=8"	4.50	14.0	17.9	Header = W x H exposed		+100%
Norwegian	12 x 3-1/5 x 4			5C=16"	3.75	14.6	18.6	Rowlock = H x W exposed		+100%
Roman	12 x 2 x 4			2C=4"	6.00	13.4	17.0	Rowlock stretcher = L x W exposed		+33.3%
SCR	12 x 2-2/3 x 6			3C=8"	4.50	21.8	28.0	Soldier = H x L exposed		—
Utility	12 x 4 x 4			1C=4"	3.00	15.4	19.6	Sailor = W x L exposed		-33.3%

Concrete Blocks Nominal Size		Approximate Weight per S.F.		Blocks per 100 S.F.	Mortar per M block, waste included	
		Standard	Lightweight		Partitions	Back up
2"	x 8" x 16"	20	PSF	15	PSF	113
4"	↓	30	↓	20	↓	↓
6"	↓	42	↓	30	↓	↓
8"	↓	55	↓	38	↓	↓
10"	↓	70	↓	47	↓	↓
12"	↓	85	↓	55	↓	↓

R042210-20 Concrete Block

The material cost of special block such as corner, jamb and head block can be figured at the same price as ordinary block of same size. Labor on specials is about the same as equal-sized regular block.

Bond beam and 16" high lintel blocks are more expensive than regular units of equal size. Lintel blocks are 8" long and either 8" or 16" high.

Use of motorized mortar spreader box will speed construction of continuous walls.

Hollow non-load-bearing units are made according to ASTM C129 and hollow load-bearing units according to ASTM C90.

Metals

R0505 Common Work Results for Metals

R050516-30 Coating Structural Steel

On field-welded jobs, the shop-applied primer coat is necessarily omitted. All painting must be done in the field and usually consists of red oxide rust inhibitive paint or an aluminum paint. The table below shows paint coverage and daily production for field painting.

See Division 05 05 13.50 for hot-dipped galvanizing and Division 09 97 13.23 for field-applied cold galvanizing and other paints and protective coatings.

See Division 05 01 10.51 for steel surface preparation treatments such as wire brushing, pressure washing and sand blasting.

Type Construction	Surface Area per Ton	Coat	One Gallon Covers		In 8 Hrs. Person Covers		Average per Ton Spray	
			Brush	Spray	Brush	Spray	Gallons	Labor-hours
Light Structural	300 S.F. to 500 S.F.	1st	500 S.F.	455 S.F.	640 S.F.	2000 S.F.	0.9 gals.	1.6 L.H.
		2nd	450	410	800	2400	1.0	1.3
		3rd	450	410	960	3200	1.0	1.0
Medium	150 S.F. to 300 S.F.	All	400	365	1600	3200	0.6	0.6
Heavy Structural	50 S.F. to 150 S.F.	1st	400	365	1920	4000	0.2	0.2
		2nd	400	365	2000	4000	0.2	0.2
		3rd	400	365	2000	4000	0.2	0.2
Weighted Average	225 S.F.	All	400	365	1350	3000	0.6	0.6

R050521-20 Welded Structural Steel

Usual weight reductions with welded design run 10% to 20% compared with bolted or riveted connections. This amounts to about the same total cost compared with bolted structures since field welding is more expensive than bolts. For normal spans of 18' to 24' figure 6 to 7 connections per ton.

Trusses — For welded trusses add 4% to weight of main members for connections. Up to 15% less steel can be expected in a welded truss compared to one that is shop bolted. Cost of erection is the same whether shop bolted or welded.

General — Typical electrodes for structural steel welding are E6010, E6011, E60T and E70T. Typical buildings vary between 2# to 8# of weld rod per

ton of steel. Buildings utilizing continuous design require about three times as much welding as conventional welded structures. In estimating field erection by welding, it is best to use the average linear feet of weld per ton to arrive at the welding cost per ton. The type, size and position of the weld will have a direct bearing on the cost per linear foot. A typical field welder will deposit 1.8# to 2# of weld rod per hour manually. Using semiautomatic methods can increase production by as much as 50% to 75%.

R050523-10 High Strength Bolts

Common bolts (A307) are usually used in secondary connections (see Division 05 05 23.10).

High strength bolts (A325 and A490) are usually specified for primary connections such as column splices, beam and girder connections to columns, column bracing, connections for supports of operating equipment or of other live loads which produce impact or reversal of stress, and in structures carrying cranes of over 5-ton capacity.

Allow 20 field bolts per ton of steel for a 6 story office building, apartment house or light industrial building. For 6 to 12 stories allow 25 bolts per ton, and above 12 stories, 30 bolts per ton. On power stations, 20 to 25 bolts per ton are needed.

R051223-10 Structural Steel

The bare material prices for structural steel, shown in the unit cost sections of the book, are for 100 tons of shop-fabricated structural steel and include:

1. Mill base price of structural steel
2. Mill scrap/grade/size/length extras
3. Mill delivery to a metals service center (warehouse)
4. Service center storage and handling
5. Service center delivery to a fabrication shop
6. Shop storage and handling
7. Shop drafting/detailing
8. Shop fabrication

9. Shop coat of primer paint
10. Shop listing
11. Shop delivery to the job site

In unit cost sections of the book that contain items for field fabrication of steel components, the bare material cost of steel includes:

1. Mill base price of structural steel
2. Mill scrap/grade/size/length extras
3. Mill delivery to a metals service center (warehouse)
4. Service center storage and handling
5. Service center delivery to the job site

R051223-20 Steel Estimating Quantities

One estimate on erection is that a crane can handle 35 to 60 pieces per day. Say the average is 45. With usual sizes of beams, girders, and columns, this would amount to about 20 tons per day. The type of connection greatly affects the speed of erection. Moment connections for continuous design slow down production and increase erection costs.

Short open web bar joists can be set at the rate of 75 to 80 per day, with 50 per day being the average for setting long span joists.

After main members are calculated, add the following for usual allowances: base plates 2% to 3%; column splices 4% to 5%; and miscellaneous details 4% to 5%, for a total of 10% to 13% in addition to main members.

The ratio of column to beam tonnage varies depending on type of steels used, typical spans, story heights and live loads.

It is more economical to keep the column size constant and to vary the strength of the column by using high strength steels. This also saves floor space. Buildings have recently gone as high as ten stories with 8" high strength columns. For light columns under W8X31 lb. sections, concrete filled steel columns are economical.

High strength steels may be used in columns and beams to save floor space and to meet head room requirements. High strength steels in some sizes sometimes require long lead times.

Round, square and rectangular columns, both plain and concrete filled, are readily available and save floor area, but are higher in cost per pound than rolled columns. For high unbraced columns, tube columns may be less expensive.

Below are average minimum figures for the weights of the structural steel frame for different types of buildings using A36 steel, rolled shapes and simple joints. For economy in domes, rise to span ratio = .13. Open web joist framing systems will reduce weights by 10% to 40%. Composite design can reduce steel weight by up to 25% but additional concrete floor slab thickness may be required. Continuous design can reduce the weights up to 20%. There are many building codes with different live load requirements and different structural requirements, such as hurricane and earthquake loadings which can alter the figures.

Structural Steel Weights per S.F. of Floor Area

Type of Building	No. of Stories	Avg. Spans	L.L. #/S.F.	Lbs. Per S.F.	Type of Building	No. of Stories	Avg. Spans	L.L. #/S.F.	Lbs. Per S.F.
Steel Frame Mfg.	1	20'x20'	40	8	Apartments	2-8	20'x20'	40	8
		30'x30'		13		9-25			14
		40'x40'		18	Office	to 10	Various	80	10
Parking garage	4	Various	80	8.5		20			18
Domes	1	200'	30	10		30			26
(Schwedler)*		300'		15		over 50			35

R051223-25 Common Structural Steel Specifications

ASTM A992 (formerly A36, then A572 Grade 50) is the all-purpose carbon grade steel widely used in building and bridge construction.

The other high-strength steels listed below may each have certain advantages over ASTM A992 structural carbon steel, depending on the application.

They have proven to be economical choices where, due to lighter members, the reduction of dead load and the associated savings in shipping cost can be significant.

ASTM A588 atmospheric weathering, high-strength low-alloy steels can be used in the bare (uncoated) condition, where exposure to normal atmosphere causes a tightly adherent oxide to form on the surface protecting the steel from further oxidation. ASTM A242 corrosion-resistant, high-strength low-alloy steels have enhanced atmospheric corrosion resistance of at least two times that of carbon structural steels with copper, or four times that of carbon structural steels without copper. The reduction or elimination of maintenance resulting from the use of these steels often offsets their higher initial cost.

Steel Type	ASTM Designation	Minimum Yield Stress in KSI	Shapes Available
Carbon	A36	36	All structural shape groups, and plates & bars up thru 8" thick
	A529	50	Structural shape group 1, and plates & bars up thru 2" thick
High-Strength Low-Alloy Quenched & Self-Tempered	A913	50	All structural shape groups
		60	
		65	
		70	
High-Strength Low-Alloy Columbium-Vanadium	A572	42	All structural shape groups, and plates & bars up thru 6" thick
		50	All structural shape groups, and plates & bars up thru 4" thick
		55	Structural shape groups 1 & 2, and plates & bars up thru 2" thick
		60	Structural shape groups 1 & 2, and plates & bars up thru 1-1/4" thick
		65	Structural shape group 1, and plates & bars up thru 1-1/4" thick
High-Strength Low-Alloy Columbium-Vanadium	A992	50	All structural shape groups
Weathering High-Strength Low-Alloy	A242	42	Structural shape groups 4 & 5, and plates & bars over 1-1/2" up thru 4" thick
		46	Structural shape group 3, and plates & bars over 3/4" up thru 1-1/2" thick
		50	Structural shape groups 1 & 2, and plates & bars up thru 3/4" thick
Weathering High-Strength Low-Alloy	A588	42	Plates & bars over 5" up thru 8" thick
		46	Plates & bars over 4" up thru 5" thick
		50	All structural shape groups, and plates & bars up thru 4" thick
Quenched and Tempered Low-Alloy	A852	70	Plates & bars up thru 4" thick
Quenched and Tempered Alloy	A514	90	Plates & bars over 2-1/2" up thru 6" thick
		100	Plates & bars up thru 2-1/2" thick

R051223-30 High Strength Steels

The mill price of high strength steels may be higher than A992 carbon steel but their proper use can achieve overall savings through total reduced weights. For columns with L/r over 100, A992 steel is best; under 100, high strength steels are economical. For heavy columns, high strength steels are economical when cover plates are eliminated. There is no economy using high strength steels for clip angles or supports or for beams where deflection governs. Thinner members are more economical than thick.

The per ton erection and fabricating costs of the high strength steels will be higher than for A992 since the same number of pieces, but less weight, will be installed.

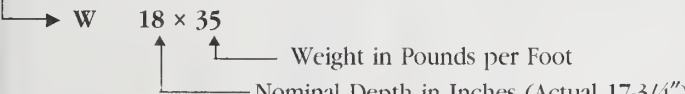
R051223-35 Common Steel Sections

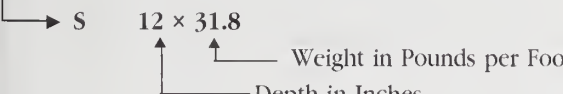
The upper portion of this table shows the name, shape, common designation and basic characteristics of commonly used steel sections. The lower

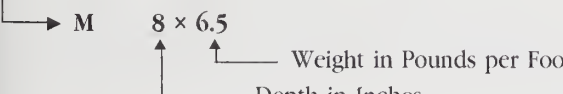
portion explains how to read the designations used for the above illustrated common sections.

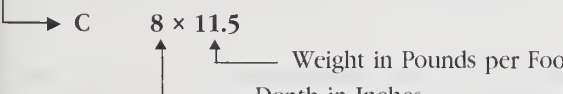
Shape & Designation	Name & Characteristics	Shape & Designation	Name & Characteristics
 W	W Shape Parallel flange surfaces	 MC	Miscellaneous Channel Infrequently rolled by some producers
 S	American Standard Beam (I Beam) Sloped inner flange	 L	Angle Equal or unequal legs, constant thickness
 M	Miscellaneous Beams Cannot be classified as W, HP or S; infrequently rolled by some producers	 T	Structural Tee Cut from W, M or S on center of web
 C	American Standard Channel Sloped inner flange	 HP	Bearing Pile Parallel flanges and equal flange and web thickness

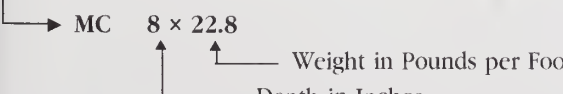
Common drawing designations follow:

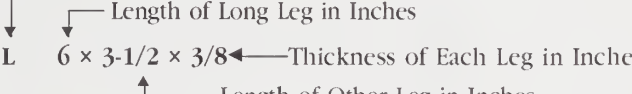
W Shape

 W 18 × 35
 ↑ ↑
 Nominal Depth in Inches (Actual 17-3/4") Weight in Pounds per Foot

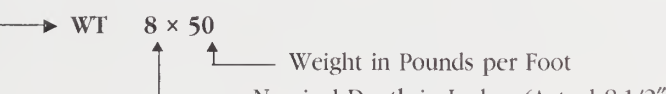
American Standard Beam

 S 12 × 31.8
 ↑ ↑
 Depth in Inches Weight in Pounds per Foot

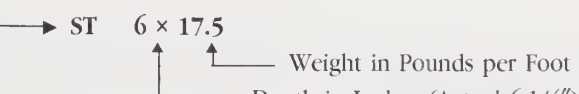
Miscellaneous Beam

 M 8 × 6.5
 ↑ ↑
 Depth in Inches Weight in Pounds per Foot

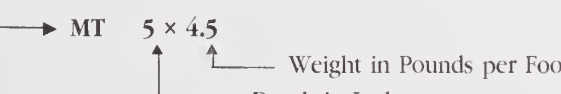
American Standard Channel

 C 8 × 11.5
 ↑ ↑
 Depth in Inches Weight in Pounds per Foot

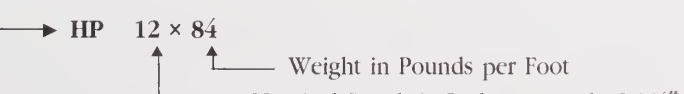
Miscellaneous Channel

 MC 8 × 22.8
 ↑ ↑
 Depth in Inches Weight in Pounds per Foot

Angle

 L 6 × 3-1/2 × 3/8
 ↑ ↑ ↑
 Length of Long Leg in Inches Thickness of Each Leg in Inches Length of Other Leg in Inches

Tee Cut from W16 × 100

 WT 8 × 50
 ↑ ↑
 Nominal Depth in Inches (Actual 8-1/2") Weight in Pounds per Foot

Tee Cut from S12 × 35

 ST 6 × 17.5
 ↑ ↑
 Depth in Inches (Actual 6-1/4") Weight in Pounds per Foot

Tee Cut from M10 × 9

 MT 5 × 4.5
 ↑ ↑
 Depth in Inches Weight in Pounds per Foot

Bearing Pile

 HP 12 × 84
 ↑ ↑
 Nominal Depth in Inches (Actual 12-1/4") Weight in Pounds per Foot

R051223-45 Installation Time for Structural Steel Building Components

The following tables show the expected average installation times for various structural steel shapes. Table A presents installation times for columns, Table B for beams, Table C for light framing and bolts, and Table D for structural steel for various project types.

Table A		
Description	Labor-Hours	Unit
Columns		
Steel, Concrete Filled		
3-1/2" Diameter	.933	Ea.
6-5/8" Diameter	1.120	Ea.
Steel Pipe		
3" Diameter	.933	Ea.
8" Diameter	1.120	Ea.
12" Diameter	1.244	Ea.
Structural Tubing		
4" x 4"	.966	Ea.
8" x 8"	1.120	Ea.
12" x 8"	1.167	Ea.
W Shape 2 Tier		
W8 x 31	.052	L.F.
W8 x 67	.057	L.F.
W10 x 45	.054	L.F.
W10 x 112	.058	L.F.
W12 x 50	.054	L.F.
W12 x 190	.061	L.F.
W14 x 74	.057	L.F.
W14 x 176	.061	L.F.

Table B				
Description	Labor-Hours	Unit	Labor-Hours	Unit
Beams, W Shape				
W6 x 9	.949	Ea.	.093	L.F.
W10 x 22	1.037	Ea.	.085	L.F.
W12 x 26	1.037	Ea.	.064	L.F.
W14 x 34	1.333	Ea.	.069	L.F.
W16 x 31	1.333	Ea.	.062	L.F.
W18 x 50	2.162	Ea.	.088	L.F.
W21 x 62	2.222	Ea.	.077	L.F.
W24 x 76	2.353	Ea.	.072	L.F.
W27 x 94	2.581	Ea.	.067	L.F.
W30 x 108	2.857	Ea.	.067	L.F.
W33 x 130	3.200	Ea.	.071	L.F.
W36 x 300	3.810	Ea.	.077	L.F.

Table C		
Description	Labor-Hours	Unit
Light Framing		
Angles 4" and Larger	.055	lbs.
Less than 4"	.091	lbs.
Channels 8" and Larger	.048	lbs.
Less than 8"	.072	lbs.
Cross Bracing Angles	.055	lbs.
Rods	.034	lbs.
Hanging Lintels	.069	lbs.
High Strength Bolts in Place		
3/4" Bolts	.070	Ea.
7/8" Bolts	.076	Ea.

Table D				
Description	Labor-Hours	Unit	Labor-Hours	Unit
Apartments, Nursing Homes, etc.				
1-2 Stories	4.211	Piece	7.767	Ton
3-6 Stories	4.444	Piece	7.921	Ton
7-15 Stories	4.923	Piece	9.014	Ton
Over 15 Stories	5.333	Piece	9.209	Ton
Offices, Hospitals, etc.				
1-2 Stories	4.211	Piece	7.767	Ton
3-6 Stories	4.741	Piece	8.889	Ton
7-15 Stories	4.923	Piece	9.014	Ton
Over 15 Stories	5.120	Piece	9.209	Ton
Industrial Buildings				
1 Story	3.478	Piece	6.202	Ton

R051223-50 Subpurlins

Bulb tee subpurlins are structural members designed to support and reinforce a variety of roof deck systems such as precast cement fiber roof deck tiles, monolithic roof deck systems, and gypsum or lightweight concrete over formboard. Other uses include interstitial service ceiling systems, wall panel

systems, and joist anchoring in bond beams. See Unit Price section for pricing on a square foot basis at 32-5/8" O.C. Maximum span is based on a 3-span condition with a total allowable vertical load of 40 psf.

R051223-80 Dimensions and Weights of Sheet Steel

Gauge No.	Approximate Thickness				Weight		
	Inches (in fractions)	Inches (in decimal parts)		Millimeters	per S.F. in Ounces	per S.F. in Lbs.	per Square Meter in Kg.
	Wrought Iron	Wrought Iron	Steel	Steel			
0000000	1/2"	.5	.4782	12.146	320	20.000	97.650
000000	15/32"	.46875	.4484	11.389	300	18.750	91.550
00000	7/16"	.4375	.4185	10.630	280	17.500	85.440
0000	13/32"	.40625	.3886	9.870	260	16.250	79.330
000	3/8"	.375	.3587	9.111	240	15.000	73.240
00	11/32"	.34375	.3288	8.352	220	13.750	67.130
0	5/16"	.3125	.2989	7.592	200	12.500	61.030
1	9/32"	.28125	.2690	6.833	180	11.250	54.930
2	17/64"	.265625	.2541	6.454	170	10.625	51.880
3	1/4"	.25	.2391	6.073	160	10.000	48.820
4	15/64"	.234375	.2242	5.695	150	9.375	45.770
5	7/32"	.21875	.2092	5.314	140	8.750	42.720
6	13/64"	.203125	.1943	4.935	130	8.125	39.670
7	3/16"	.1875	.1793	4.554	120	7.500	36.320
8	11/64"	.171875	.1644	4.176	110	6.875	33.570
9	5/32"	.15625	.1495	3.797	100	6.250	30.520
10	9/64"	.140625	.1345	3.416	90	5.625	27.460
11	1/8"	.125	.1196	3.038	80	5.000	24.410
12	7/64"	.109375	.1046	2.657	70	4.375	21.360
13	3/32"	.09375	.0897	2.278	60	3.750	18.310
14	5/64"	.078125	.0747	1.897	50	3.125	15.260
15	9/128"	.0713125	.0673	1.709	45	2.813	13.730
16	1/16"	.0625	.0598	1.519	40	2.500	12.210
17	9/160"	.05625	.0538	1.367	36	2.250	10.990
18	1/20"	.05	.0478	1.214	32	2.000	9.765
19	7/160"	.04375	.0418	1.062	28	1.750	8.544
20	3/80"	.0375	.0359	.912	24	1.500	7.324
21	11/320"	.034375	.0329	.836	22	1.375	6.713
22	1/32"	.03125	.0299	.759	20	1.250	6.103
23	9/320"	.028125	.0269	.683	18	1.125	5.490
24	1/40"	.025	.0239	.607	16	1.000	4.882
25	7/320"	.021875	.0209	.531	14	.875	4.272
26	3/160"	.01875	.0179	.455	12	.750	3.662
27	11/640"	.0171875	.0164	.417	11	.688	3.357
28	1/64"	.015625	.0149	.378	10	.625	3.052

R053100-10 Decking Descriptions

General - All Deck Products

Steel deck is made by cold forming structural grade sheet steel into a repeating pattern of parallel ribs. The strength and stiffness of the panels are the result of the ribs and the material properties of the steel. Deck lengths can be varied to suit job conditions, but because of shipping considerations, are usually less than 40 feet. Standard deck width varies with the product used but full sheets are usually 12", 18", 24", 30", or 36". Deck is typically furnished in a standard width with the ends cut square. Any cutting for width, such as at openings or for angular fit, is done at the job site.

Deck is typically attached to the building frame with arc puddle welds, self-drilling screws, or powder or pneumatically driven pins. Sheet to sheet fastening is done with screws, button punching (crimping), or welds.

Composite Floor Deck

After installation and adequate fastening, floor deck serves several purposes. It (a) acts as a working platform, (b) stabilizes the frame, (c) serves as a concrete form for the slab, and (d) reinforces the slab to carry the design loads applied during the life of the building. Composite decks are distinguished by the presence of shear connector devices as part of the deck. These devices are designed to mechanically lock the concrete and deck together so that the concrete and the deck work together to carry subsequent floor loads. These shear connector devices can be rolled-in embossments, lugs, holes, or wires welded to the panels. The deck profile can also be used to interlock concrete and steel.

Composite deck finishes are either galvanized (zinc coated) or phosphatized/painted. Galvanized deck has a zinc coating on both the top and bottom surfaces. The phosphatized/painted deck has a bare (phosphatized) top surface that will come into contact with the concrete. This bare top surface can be expected to develop rust before the concrete is placed. The bottom side of the deck has a primer coat of paint.

Composite floor deck is normally installed so the panel ends do not overlap on the supporting beams. Shear lugs or panel profile shape often prevent a tight metal to metal fit if the panel ends overlap; the air gap caused by overlapping will prevent proper fusion with the structural steel supports when the panel end laps are shear stud welded.

Adequate end bearing of the deck must be obtained as shown on the drawings. If bearing is actually less in the field than shown on the drawings, further investigation is required.

Roof Deck

Roof deck is not designed to act compositely with other materials. Roof deck acts alone in transferring horizontal and vertical loads into the building frame. Roof deck rib openings are usually narrower than floor deck rib openings. This provides adequate support of rigid thermal insulation board.

Roof deck is typically installed to endlap approximately 2" over supports. However, it can be butted (or lapped more than 2") to solve field fit problems. Since designers frequently use the installed deck system as part of the horizontal bracing system (the deck as a diaphragm), any fastening substitution or change should be approved by the designer. Continuous perimeter support of the deck is necessary to limit edge deflection in the finished roof and may be required for diaphragm shear transfer.

Standard roof deck finishes are galvanized or primer painted. The standard factory applied paint for roof deck is a primer paint and is not intended to weather for extended periods of time. Field painting or touching up of abrasions and deterioration of the primer coat or other protective finishes is the responsibility of the contractor.

Cellular Deck

Cellular deck is made by attaching a bottom steel sheet to a roof deck or composite floor deck panel. Cellular deck can be used in the same manner as floor deck. Electrical, telephone, and data wires are easily run through the chase created between the deck panel and the bottom sheet.

When used as part of the electrical distribution system, the cellular deck must be installed so that the ribs line up and create a smooth cell transition at abutting ends. The joint that occurs at butting cell ends must be taped or otherwise sealed to prevent wet concrete from seeping into the cell. Cell interiors must be free of welding burrs, or other sharp intrusions, to prevent damage to wires.

When used as a roof deck, the bottom flat plate is usually left exposed to view. Care must be maintained during erection to keep good alignment and prevent damage.

Cellular deck is sometimes used with the flat plate on the top side to provide a flat working surface. Installation of the deck for this purpose requires special methods for attachment to the frame because the flat plate, now on the top, can prevent direct access to the deck material that is bearing on the structural steel. It may be advisable to treat the flat top surface to prevent slipping.

Cellular deck is always furnished galvanized or painted over galvanized.

Form Deck

Form deck can be any floor or roof deck product used as a concrete form. Connections to the frame are by the same methods used to anchor floor and roof deck. Welding washers are recommended when welding deck that is less than 20 gauge thickness.

Form deck is furnished galvanized, prime painted, or uncoated. Galvanized deck must be used for those roof deck systems where form deck is used to carry a lightweight insulating concrete fill.

R061110-30 Lumber Product Material Prices

The price of forest products fluctuates widely from location to location and from season to season depending upon economic conditions. The bare material prices in the unit cost sections of the book show the National Average material prices in effect Jan. 1 of this book year. It must be noted that lumber prices in general may change significantly during the year.

Availability of certain items depends upon geographic location and must be checked prior to firm-price bidding.

R061636-20 Plywood

There are two types of plywood used in construction: interior, which is moisture-resistant but not waterproofed, and exterior, which is waterproofed.

The grade of the exterior surface of the plywood sheets is designated by the first letter: A, for smooth surface with patches allowed; B, for solid surface with patches and plugs allowed; C, which may be surface plugged or may have knot holes up to 1" wide; and D, which is used only for interior type plywood and may have knot holes up to 2-1/2" wide. "Structural Grade" is specifically designed for engineered applications such as box beams. All CC & DD grades have roof and floor spans marked on them.

Underlayment-grade plywood runs from 1/4" to 1-1/4" thick. Thicknesses 5/8" and over have optional tongue and groove joints which eliminate the need for blocking the edges. Underlayment 19/32" and over may be referred to as Sturd-i-Floor.

The price of plywood can fluctuate widely due to geographic and economic conditions.

Typical uses for various plywood grades are as follows:

AA-AD Interior — cupboards, shelving, paneling, furniture

BB Plyform — concrete form plywood

CDX — wall and roof sheathing

Structural — box beams, girders, stressed skin panels

AA-AC Exterior — fences, signs, siding, soffits, etc.

Underlayment — base for resilient floor coverings

Overlaid HDO — high density for concrete forms & highway signs

Overlaid MDO — medium density for painting, siding, soffits & signs

303 Siding — exterior siding, textured, striated, embossed, etc.

R073126-20 Roof Slate

16", 18" and 20" are standard lengths, and slate usually comes in random widths. For standard 3/16" thickness use 1-1/2" copper nails. Allow for 3% breakage.

R075113-20 Built-Up Roofing

Asphalt is available in kegs of 100 lbs. each; coal tar pitch in 560 lb. kegs. Prepared roofing felts are available in a wide range of sizes, weights and characteristics. However, the most commonly used are #15 (432 S.F. per roll, 13 lbs. per square) and #30 (216 S.F. per roll, 27 lbs. per square).

Inter-ply bitumen varies from 24 lbs. per sq. (asphalt) to 30 lbs. per sq. (coal tar) per ply, MF4@ 25%. Flood coat bitumen also varies from 60 lbs. per sq. (asphalt) to 75 lbs. per sq. (coal tar), MF4@ 25%. Expendable equipment (mops, brooms, screeds, etc.) runs about 16% of the bitumen cost. For new, inexperienced crews this factor may be much higher.

Rigid insulation board is typically applied in two layers. The first is mechanically attached to nailable decks or spot or solid mopped to non-nailable decks; the second layer is then spot or solid mopped to the first layer. Membrane application follows the insulation, except in protected membrane roofs, where the membrane goes down first and the insulation on top, followed with ballast (stone or concrete pavers). Insulation and related labor costs are NOT included in prices for built-up roofing.

R075213-30 Modified Bitumen Roofing

The cost of modified bitumen roofing is highly dependent on the type of installation that is planned. Installation is based on the type of modifier used in the bitumen. The two most popular modifiers are atactic polypropylene (APP) and styrene butadiene styrene (SBS). The modifiers are added to heated bitumen during the manufacturing process to change its characteristics. A polyethylene, polyester or fiberglass reinforcing sheet is then sandwiched between layers of this bitumen. When completed, the result is a pre-assembled, built-up roof that has increased elasticity and weatherability. Some manufacturers include a surfacing material such as ceramic or mineral granules, metal particles or sand.

The preferred method of adhering SBS-modified bitumen roofing to the substrate is with hot-mopped asphalt (much the same as built-up roofing). This installation method requires a tar kettle/pot to heat the asphalt, as well as the labor, tools and equipment necessary to distribute and spread the hot asphalt.

The alternative method for applying APP and SBS modified bitumen is as follows. A skilled installer uses a torch to melt a small pool of bitumen off the membrane. This pool must form across the entire roll for proper adhesion. The installer must unroll the roofing at a pace slow enough to melt the bitumen, but fast enough to prevent damage to the rest of the membrane.

Modified bitumen roofing provides the advantages of both built-up and single-ply roofing. Labor costs are reduced over those of built-up roofing because only a single ply is necessary. The elasticity of single-ply roofing is attained with the reinforcing sheet and polymer modifiers. Modifieds have some self-healing characteristics and because of their multi-layer construction, they offer the reliability and safety of built-up roofing.

R078413-30 Firestopping

Firestopping is the sealing of structural, mechanical, electrical and other penetrations through fire-rated assemblies. The basic components of firestop systems are safing insulation and firestop sealant on both sides of wall penetrations and the top side of floor penetrations.

Pipe penetrations are assumed to be through concrete, grout, or joint compound and can be sleeved or unsleeved. Costs for the penetrations and sleeves are not included. An annular space of 1" is assumed. Escutcheons are not included.

Metallic pipe is assumed to be copper, aluminum, cast iron or similar metallic material. Insulated metallic pipe is assumed to be covered with a thermal insulating jacket of varying thickness and materials.

Non-metallic pipe is assumed to be PVC, CPVC, FR Polypropylene or similar plastic piping material. Intumescent firestop sealant or wrap strips are included. Collars on both sides of wall penetrations and a sheet metal plate on the underside of floor penetrations are included.

Ductwork is assumed to be sheet metal, stainless steel or similar metallic material. Duct penetrations are assumed to be through concrete, grout or joint compound. Costs for penetrations and sleeves are not included. An annular space of 1/2" is assumed.

Multi-trade openings include costs for sheet metal forms, firestop mortar, wrap strips, collars and sealants as necessary.

Structural penetrations joints are assumed to be 1/2" or less. CMU walls are assumed to be within 1-1/2" of metal deck. Drywall walls are assumed to be tight to the underside of metal decking.

Metal panel, glass or curtain wall systems include a spandrel area of 5' filled with mineral wool foil-faced insulation. Fasteners and stiffeners are included.

Openings**R0813 Metal Doors****R081313-20 Steel Door Selection Guide**

Standard steel doors are classified into four levels, as recommended by the Steel Door Institute in the chart below. Each of the four levels offers a range of construction models and designs, to meet architectural requirements for preference and appearance, including full flush, seamless, and stile & rail. Recommended minimum gauge requirements are also included.

For complete standard steel door construction specifications and available sizes, refer to the Steel Door Institute Technical Data Series, ANSI A250.8-98 (SDI-100), and ANSI A250.4-94 Test Procedure and Acceptance Criteria for Physical Endurance of Steel Door and Hardware Reinforcements.

Level		Model	Construction	For Full Flush or Seamless		
				Min. Gauge	Thickness (in)	Thickness (mm)
I	Standard Duty	1	Full Flush	20	0.032	0.8
		2	Seamless			
II	Heavy Duty	1	Full Flush	18	0.042	1.0
		2	Seamless			
III	Extra Heavy Duty	1	Full Flush	16	0.053	1.3
		2	Seamless			
		3	*Stile & Rail			
IV	Maximum Duty	1	Full Flush	14	0.067	1.6
		2	Seamless			

*Stiles & rails are 16 gauge; flush panels, when specified, are 18 gauge

Openings**R0851 Metal Windows****R085123-10 Steel Sash**

Ironworker crew will erect 25 S.F. or 1.3 sash unit per hour, whichever is less.

Mechanic will point 30 L.F. per hour.

Painter will paint 90 S.F. per coat per hour.

Glazier production depends on light size.

Allow 1 lb. special steel sash putty per 16" x 20" light.

Openings**R0852 Wood Windows****R085216-10 Window Estimates**

To ensure a complete window estimate, be sure to include the material and labor costs for each window, as well as the material and labor costs for an interior wood trim set.

R087110-10 Hardware Finishes

This table describes hardware finishes used throughout the industry. It also shows the base metal and the respective symbols in the three predominate

systems of identification. Many of these are used in pricing descriptions in Division Eight.

US"	BMHA*	CDN	Base	Description
US P	600	CP	Steel	Primed for Painting
US 1B	601	C1B	Steel	Bright Black Japanned
US 2C	602	C2C	Steel	Zinc Plated
US 2G	603	C2G	Steel	Zinc Plated
US 3	605	C3	Brass	Bright Brass, Clear Coated
US 4	606	C4	Brass	Satin Brass, Clear Coated
US 5	609	C5	Brass	Satin Brass, Blackened, Satin Relieved, Clear Coated
US 7	610	C7	Brass	Satin Brass, Blackened, Bright Relived, Clear Coated
US 9	611	C9	Bronze	Bright Bronze, Clear Coated
US 10	612	C10	Bronze	Satin Bronze, Clear Coated
US 10A	641	C10A	Steel	Antiqued Bronze, Oiled and Lacquered
US 10B	613	C10B	Bronze	Antiqued Bronze, Oiled
US 11	616	C11	Bronze	Satin Bronze, Blackened, Satin Relieved, Clear Coated
US 14	618	C14	Brass/Bronze	Bright Nickel Plated, Clear Coated
US 15	619	C15	Brass/Bronze	Satin Nickel, Clear Coated
US 15A	620	C15A	Brass/Bronze	Satin Nickel Plated, Blackened, Satin Relieved, Clear Coated
US 17A	621	C17A	Brass/Bronze	Nickel Plated, Blackened, Relieved, Clear Coated
US 19	622	C19	Brass/Bronze	Flat Black Coated
US 20	623	C20	Brass/Bronze	Statuary Bronze, Light
US 20A	624	C20A	Brass/Bronze	Statuary Bronze, Dark
US 26	625	C26	Brass/Bronze	Bright Chromium
US 26D	626	C26D	Brass/Bronze	Satin Chromium
US 20	627	C27	Aluminum	Satin Aluminum Clear
US 28	628	C28	Aluminum	Anodized Dull Aluminum
US 32	629	C32	Stainless Steel	Bright Stainless Steel
US 32D	630	C32D	Stainless Steel	Stainless Steel
US 3	632	C3	Steel	Bright Brass Plated, Clear Coated
US 4	633	C4	Steel	Satin Brass, Clear Coated
US 7	636	C7	Steel	Satin Brass Plated, Blackened, Bright Relieved, Clear Coated
US 9	637	C9	Steel	Bright Bronze Plated, Clear Coated
US 5	638	C5	Steel	Satin Brass Plated, Blackened, Bright Relieved, Clear Coated
US 10	639	C10	Steel	Satin Bronze Plated, Clear Coated
US 10B	640	C10B	Steel	Antique Bronze, Oiled
US 10A	641	C10A	Steel	Antiqued Bronze, Oiled and Lacquered
US 11	643	C11	Steel	Satin Bronze Plated, Blackened, Bright Relieved, Clear Coated
US 14	645	C14	Steel	Bright Nickel Plated, Clear Coated
US 15	646	C15	Steel	Satin Nickel Plated, Clear Coated
US 15A	647	C15A	Steel	Nickel Plated, Blackened, Bright Relieved, Clear Coated
US 17A	648	C17A	Steel	Nickel Plated, Blackened, Relieved, Clear Coated
US 20	649	C20	Steel	Statuary Bronze, Light
US 20A	650	C20A	Steel	Statuary Bronze, Dark
US 26	651	C26	Steel	Bright Chromium Plated
US 26D	652	C26D	Steel	Satin Chromium Plated

* - BMHA Builders Hardware Manufacturing Association

— US Equivalent

^ - Canadian Equivalent

Japanning is imitating Asian lacquer work

R087120-10 Hinges

All closer equipped doors should have ball bearing hinges. Lead lined or extremely heavy doors require special strength hinges. Usually 1-1/2 pair of

hinges are used per door up to 7'-6" high openings. Table below shows typical hinge requirements.

Use Frequency	Type Hinge Required	Type of Opening	Type of Structure
High	Heavy weight ball bearing	Entrances Toilet Rooms	Banks, Office buildings, Schools, Stores & Theaters Office buildings and Schools
Average	Standard weight ball bearing	Entrances Corridors Toilet Rooms	Dwellings Office buildings and Schools Stores
Low	Plain bearing	Interior	Dwellings

Door Thickness	Weight of Doors in Pounds per Square Foot				
	White Pine	Oak	Hollow Core	Solid Core	Hollow Metal
1-3/8"	3psf	6psf	1-1/2psf	3-1/2 — 4psf	6-1/2psf
1-3/4"	3-1/2	7	2-1/2	4-1/2 — 5-1/4	6-1/2
2-1/4"	4-1/2	9	—	5-1/2 — 6-3/4	6-1/2

Openings

R0881 Glass Glazing

R088110-10 Glazing Productivity

Some glass sizes are estimated by the "united inch" (height + width). The table below shows the number of lights glazed in an eight-hour period by the crew size indicated, for glass up to 1/4" thick. Square or nearly square lights are more economical on a S.F. basis. Long slender lights will have a

high S.F. installation cost. For insulated glass reduce production by 33%. For 1/2" float glass reduce production by 50%. Production time for glazing with two glaziers per day averages: 1/4" float glass 120 S.F.; 1/2" float glass 55 S.F.; 1/2" insulated glass 95 S.F.; 3/4" insulated glass 75 S.F.

Glazing Method	United Inches per Light							
	40"	60"	80"	100"	135"	165"	200"	240"
Number of Men in Crew	1	1	1	1	2	3	3	4
Industrial sash, putty	60	45	24	15	18	—	—	—
With stops, putty bed	50	36	21	12	16	8	4	3
Wood stops, rubber	40	27	15	9	11	6	3	2
Metal stops, rubber	30	24	14	9	9	6	3	2
Structural glass	10	7	4	3	—	—	—	—
Corrugated glass	12	9	7	4	4	4	3	—
Storefronts	16	15	13	11	7	6	4	4
Skylights, putty glass	60	36	21	12	16	—	—	—
Thiokol set	15	15	11	9	9	6	3	2
Vinyl set, snap on	18	18	13	12	12	7	5	4
Maximum area per light	2.8 S.F.	6.3 S.F.	11.1 S.F.	17.4 S.F.	31.6 S.F.	47 S.F.	69 S.F.	100 S.F.

R092000-50 Lath, Plaster and Gypsum Board

Gypsum board lath is available in 3/8" thick × 16" wide × 4' long sheets as a base material for multi-layer plaster applications. It is also available as a base for either multi-layer or veneer plaster applications in 1/2" and 5/8" thick—4' wide × 8', 10' or 12' long sheets. Fasteners are screws or blued ring shank nails for wood framing and screws for metal framing.

Metal lath is available in diamond mesh pattern with flat or self-furring profiles. Paper backing is available for applications where excessive plaster waste needs to be avoided. A slotted mesh ribbed lath should be used in areas where the span between structural supports is greater than normal. Most metal lath comes in 27" × 96" sheets. Diamond mesh weighs 1.75, 2.5 or 3.4 pounds per square yard, slotted mesh lath weighs 2.75 or 3.4 pounds per square yard. Metal lath can be nailed, screwed or tied in place.

Many **accessories** are available. Corner beads, flat reinforcing strips, casing beads, control and expansion joints, furring brackets and channels are some examples. Note that accessories are not included in plaster or stucco line items.

Plaster is defined as a material or combination of materials that when mixed with a suitable amount of water, forms a plastic mass or paste. When applied to a surface, the paste adheres to it and subsequently hardens, preserving in a rigid state the form or texture imposed during the period of elasticity.

Gypsum plaster is made from ground calcined gypsum. It is mixed with aggregates and water for use as a base coat plaster.

Vermiculite plaster is a fire-retardant plaster covering used on steel beams, concrete slabs and other heavy construction materials. Vermiculite is a group name for certain clay minerals, hydrous silicates or aluminum, magnesium and iron that have been expanded by heat.

Perlite plaster is a plaster using perlite as an aggregate instead of sand. Perlite is a volcanic glass that has been expanded by heat.

Gauging plaster is a mix of gypsum plaster and lime putty that when applied produces a quick drying finish coat.

Veneer plaster is a one or two component gypsum plaster used as a thin finish coat over special gypsum board.

Keenes cement is a white cementitious material manufactured from gypsum that has been burned at a high temperature and ground to a fine powder. Alum is added to accelerate the set. The resulting plaster is hard and strong and accepts and maintains a high polish, hence it is used as a finishing plaster.

Stucco is a Portland cement based plaster used primarily as an exterior finish.

Plaster is used on both interior and exterior surfaces. Generally it is applied in multiple-coat systems. A three-coat system uses the terms scratch, brown and finish to identify each coat. A two-coat system uses base and finish to describe each coat. Each type of plaster and application system has attributes that are chosen by the designer to best fit the intended use.

Gypsum Plaster Quantities for 100 S.Y.	2 Coat, 5/8" Thick		3 Coat, 3/4" Thick		
	Base	Finish	Scratch	Brown	Finish
	1:3 Mix	2:1 Mix	1:2 Mix	1:3 Mix	2:1 Mix
Gypsum plaster	1,300 lb.		1,350 lb.	650 lb.	
Sand	1.75 C.Y.		1.85 C.Y.	1.35 C.Y.	
Finish hydrated lime		340 lb.			340 lb.
Gauging plaster		170 lb.			170 lb.

Vermiculite or Perlite Plaster Quantities for 100 S.Y.	2 Coat, 5/8" Thick		3 Coat, 3/4" Thick		
	Base	Finish	Scratch	Brown	Finish
Gypsum plaster	1,250 lb.		1,450 lb.	800 lb.	
Vermiculite or perlite	7.8 bags		8.0 bags	3.3 bags	
Finish hydrated lime		340 lb.			340 lb.
Gauging plaster		170 lb.			170 lb.

Stucco—Three-Coat System Quantities for 100 S.Y.	On Wood Frame	On Masonry
Portland cement	29 bags	21 bags
Sand	2.6 C.Y.	2.0 C.Y.
Hydrated lime	180 lb.	120 lb.

R092910-10 Levels of Gypsum Drywall Finish

In the past, contract documents often used phrases such as "industry standard" and "workmanlike finish" to specify the expected quality of gypsum board wall and ceiling installations. The vagueness of these descriptions led to unacceptable work and disputes.

In order to resolve this problem, four major trade associations concerned with the manufacture, erection, finish, and decoration of gypsum board wall and ceiling systems have developed an industry-wide *Recommended Levels of Gypsum Board Finish*.

The finish of gypsum board walls and ceilings for specific final decoration is dependent on a number of factors. A primary consideration is the location of the surface and the degree of decorative treatment desired. Painted and unpainted surfaces in warehouses and other areas where appearance is normally not critical may simply require the taping of wallboard joints and 'spotting' of fastener heads. Blemish-free, smooth, monolithic surfaces often intended for painted and decorated walls and ceilings in habited structures, ranging from single-family dwellings through monumental buildings, require additional finishing prior to the application of the final decoration.

Other factors to be considered in determining the level of finish of the gypsum board surface are (1) the type of angle of surface illumination (both natural and artificial lighting), and (2) the paint and method of application or the type and finish of wallcovering specified as the final decoration. Critical lighting conditions, gloss paints, and thin wall coverings require a higher level of gypsum board finish than do heavily textured surfaces which are subsequently painted or surfaces which are to be decorated with heavy grade wall coverings.

The following descriptions were developed jointly by the Association of the Wall and Ceiling Industries-International (AWCI), Ceiling & Interior Systems Construction Association (CISCA), Gypsum Association (GA), and Painting and Decorating Contractors of America (PDCA) as a guide.

Level 0: Used in temporary construction or wherever the final decoration has not been determined. Unfinished. No taping, finishing or corner beads are required. Also could be used where non-predecorated panels will be used in demountable-type partitions that are to be painted as a final finish.

Level 1: Frequently used in plenum areas above ceilings, in attics, in areas where the assembly would generally be concealed, or in building service corridors and other areas not normally open to public view. Some degree of sound and smoke control is provided; in some geographic areas, this level is referred to as "fire-taping," although this level of finish does not typically meet fire-resistant assembly requirements. Where a fire resistance rating is required for the gypsum board assembly, details of construction should be in accordance with reports of fire tests of assemblies that have met the requirements of the fire rating acceptable.

All joints and interior angles shall have tape embedded in joint compound. Accessories are optional at specifier discretion in corridors and other areas with pedestrian traffic. Tape and fastener heads need not be covered with joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.

Level 2: It may be specified for standard gypsum board surfaces in garages, warehouse storage, or other similar areas where surface appearance is not of primary importance.

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife or trowel, leaving a thin coating of joint compound over all joints and interior angles. Fastener heads and accessories shall be covered with a coat of joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.

Level 3: Typically used in areas that are to receive heavy texture (spray or hand applied) finishes before final painting, or where commercial-grade (heavy duty) wall coverings are to be applied as the final decoration. This level of finish should not be used where smooth painted surfaces or where lighter weight wall coverings are specified. The prepared surface shall be coated with a drywall primer prior to the application of final finishes.

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife or trowel, leaving a thin coating of joint compound over all joints and interior angles. One additional coat of joint compound shall be applied over all joints and interior angles. Fastener heads and accessories shall be covered with two separate coats of joint compound. All joint compounds shall be smooth and free of tool marks and ridges. The prepared surface shall be covered with a drywall primer prior to the application of the final decoration.

Level 4: This level should be used where residential grade (light duty) wall coverings, flat paints, or light textures are to be applied. The prepared surface shall be coated with a drywall primer prior to the application of final finishes. Release agents for wall coverings are specifically formulated to minimize damage if coverings are subsequently removed.

The weight, texture, and sheen level of the wall covering material selected should be taken into consideration when specifying wall coverings over this level of drywall treatment. Joints and fasteners must be sufficiently concealed if the wall covering material is lightweight, contains limited pattern, has a glossy finish, or has any combination of these features. In critical lighting areas, flat paints applied over light textures tend to reduce joint photographing. Gloss, semi-gloss, and enamel paints are not recommended over this level of finish.

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife or trowel, leaving a thin coating of joint compound over all joints and interior angles. In addition, two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compounds shall be smooth and free of tool marks and ridges. The prepared surface shall be covered with a drywall primer like Sheetrock® First Coat prior to the application of the final decoration.

Level 5: The highest quality finish is the most effective method to provide a uniform surface and minimize the possibility of joint photographing and of fasteners showing through the final decoration. This level of finish is required where gloss, semi-gloss, or enamel is specified; when flat joints are specified over an untextured surface; or where critical lighting conditions occur. The prepared surface shall be coated with a drywall primer prior to the application of final decoration.

All joints and interior angles shall have tape embedded in joint compound and be immediately wiped with a joint knife or trowel, leaving a thin coating of joint compound over all joints and interior angles. Two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound.

A thin skim coat of joint compound shall be trowel applied to the entire surface. Excess compound is immediately troweled off, leaving a film or skim coating of compound completely covering the paper. As an alternative to a skim coat, a material manufactured especially for this purpose may be applied such as Sheetrock® Tuff-Hide primer surfacer. The surface must be smooth and free of tool marks and ridges. The prepared surface shall be covered with a drywall primer prior to the application of the final decoration.

Finishes

R0966 Terrazzo Flooring

R096613-10 Terrazzo Floor

The table below lists quantities required for 100 S.F. of 5/8" terrazzo topping, either bonded or not bonded.

Description	Bonded to Concrete 1-1/8" Bed, 1:4 Mix	Not Bonded 2-1/8" Bed and 1/4" Sand
Portland cement, 94 lb. Bag	6 bags	8 bags
Sand	10 C.F.	20 C.F.
Divider strips, 4' squares	50 L.F.	50 L.F.
Terrazzo fill, 50 lb. Bag	12 bags	12 bags
15 Lb. tarred felt		1 C.S.F.
Mesh 2 x 2 #14 galvanized		1 C.S.F.
Crew J-3	0.77 days	0.87 days

2' x 2' panels require 1.00 L.F. divider strip per S.F.

3' x 3' panels require 0.67 L.F. divider strip per S.F.

4' x 4' panels require 0.50 L.F. divider strip per S.F.

5' x 5' panels require 0.40 L.F. divider strip per S.F.

6' x 6' panels require 0.33 L.F. divider strip per S.F.

Finishes

R0972 Wall Coverings

R097223-10 Wall Covering

The table below lists the quantities required for 100 S.F. of wall covering.

Description	Medium-Priced Paper	Expensive Paper
Paper	1.6 dbl. rolls	1.6 dbl. rolls
Wall sizing	0.25 gallon	0.25 gallon
Vinyl wall paste	0.6 gallon	0.6 gallon
Apply sizing	0.3 hour	0.3 hour
Apply paper	1.2 hours	1.5 hours

Most wallpapers now come in double rolls only.

To remove old paper, allow 1.3 hours per 100 S.F.

R099100-10 Painting Estimating Techniques

Proper estimating methodology is needed to obtain an accurate painting estimate. There is no known reliable shortcut or square foot method. The following steps should be followed:

- List all surfaces to be painted, with an accurate quantity (area) of each. Items having similar surface condition, finish, application method and accessibility may be grouped together.
- List all the tasks required for each surface to be painted, including surface preparation, masking, and protection of adjacent surfaces. Surface preparation may include minor repairs, washing, sanding and puttying.
- Select the proper Means line for each task. Review and consider all adjustments to labor and materials for type of paint and location of work. Apply the height adjustment carefully. For instance, when applying the adjustment for work over 8' high to a wall that is 12' high, apply the adjustment only to the area between 8' and 12' high, and not to the entire wall.

When applying more than one percent (%) adjustment, apply each to the base cost of the data, rather than applying one percentage adjustment on top of the other.

When estimating the cost of painting walls and ceilings remember to add the brushwork for all cut-ins at inside corners and around windows and doors as a LF measure. One linear foot of cut-in with brush equals one square foot of painting.

All items for spray painting include the labor for roll-back.

Deduct for openings greater than 100 SF, or openings that extend from floor to ceiling and are greater than 5' wide. Do not deduct small openings.

The cost of brushes, rollers, ladders and spray equipment are considered to be part of a painting contractor's overhead, and should not be added to the estimate. The cost of rented equipment such as scaffolding and swing staging should be added to the estimate.

R099100-20 Painting

Item	Coat	One Gallon Covers			In 8 Hours a Laborer Covers			Labor-Hours per 100 S.F.		
		Brush	Roller	Spray	Brush	Roller	Spray	Brush	Roller	Spray
Paint wood siding	prime	250 S.F.	225 S.F.	290 S.F.	1150 S.F.	1300 S.F.	2275 S.F.	.695	.615	.351
	others	270	250	290	1300	1625	2600	.615	.492	.307
Paint exterior trim	prime	400	—	—	650	—	—	1.230	—	—
	1st	475	—	—	800	—	—	1.000	—	—
	2nd	520	—	—	975	—	—	.820	—	—
Paint shingle siding	prime	270	255	300	650	975	1950	1.230	.820	.410
	others	360	340	380	800	1150	2275	1.000	.695	.351
Stain shingle siding	1st	180	170	200	750	1125	2250	1.068	.711	.355
	2nd	270	250	290	900	1325	2600	.888	.603	.307
Paint brick masonry	prime	180	135	160	750	800	1800	1.066	1.000	.444
	1st	270	225	290	815	975	2275	.981	.820	.351
	2nd	340	305	360	815	1150	2925	.981	.695	.273
Paint interior plaster or drywall	prime	400	380	495	1150	2000	3250	.695	.400	.246
	others	450	425	495	1300	2300	4000	.615	.347	.200
Paint interior doors and windows	prime	400	—	—	650	—	—	1.230	—	—
	1st	425	—	—	800	—	—	1.000	—	—
	2nd	450	—	—	975	—	—	.820	—	—

Special Construction
R1311 Swimming Pools
R131113-20 Swimming Pools

Pool prices given per square foot of surface area include pool structure, filter and chlorination equipment, pumps, related piping, ladders/steps, maintenance kit, skimmer and vacuum system. Decks and electrical service to equipment are not included.

Residential in-ground pool construction can be divided into two categories: vinyl lined and gunite. Vinyl lined pool walls are constructed of different materials including wood, concrete, plastic or metal. The bottom is often graded with sand over which the vinyl liner is installed. Vermiculite or soil cement bottoms may be substituted for an added cost.

Gunite pool construction is used both in residential and municipal installations. These structures are steel reinforced for strength and finished with a white cement limestone plaster.

Municipal pools will have a higher cost because plumbing codes require more expensive materials, chlorination equipment and higher filtration rates.

Municipal pools greater than 1,800 S.F. require gutter systems to control waves. This gutter may be formed into the concrete wall. Often a vinyl/stainless steel gutter or gutter/wall system is specified, which will raise the pool cost.

Competition pools usually require tile bottoms and sides with contrasting lane striping, which will also raise the pool cost.

R133113-10 Air Supported Structures

Air supported structures are made from fabrics that can be classified into two groups, temporary and permanent. Temporary fabrics include nylon, woven polyethylene, vinyl film, and vinyl coated dacron. These have lifespans that range from five to fifteen plus years. The cost per square foot includes a fabric shell, tension cables, primary and back-up inflation systems and doors. The lower cost structures are used for construction shelters, bulk storage and pond covers. The more expensive are used for recreational structures and warehouses.

Permanent fabrics are teflon coated fiberglass. The life of this structure is twenty plus years. The high cost limits its application to architectural designed structures which call for a clear span covered area, such as stadiums and convention centers. Both temporary and permanent structures are available in translucent fabrics which eliminates the need for daytime lighting.

Areas to be covered vary from 10,000 S.F. to any area up to 1000 foot wide by any length. Height restrictions range from a maximum of 1/2 of

width to a minimum of 1/6 of the width. Erection of even the largest of the temporary structures requires no more than a week.

Centrifugal fans provide the inflation necessary to support the structure during application of live loads. Airlocks are usually used at large entrances to prevent loss of static pressure. Some manufacturers employ propeller fans which generate sufficient airflow (30,000 CFM) to eliminate the need for airlocks. These fans may also be automatically controlled to resist high wind conditions, regulate humidity (air changes), and provide cooling and heat.

Insulation can be provided with the addition of a second or even third interior liner, creating a dead air space with an "R" value of four to nine. Some structures allow for the liner to be collapsed into the outer shell to enable the internal heat to melt accumulated snow. For cooling or air conditioning, the exterior face of the liner can be aluminized to reflect the sun's heat.

R133113-90 Seismic Bracing

Sometimes referred to as anti-sway bracing, this support system is required in earthquake areas. The individual components must be assembled to

make a required system.

Example	Additionally, height factors must be taken into account. Add the following percentages to labor for elevated installations:	
	C-Clamp 3/8" rod	2 ea.
	Rod, continuous thread 3/8"	10 L.F.
	Field, weld 1"	2 ea.
	15' to 20' high	10%
	21' to 25' high	20%
	26' to 30' high	30%
	31' to 35' high	40%
	36' to 40' high	50%
	41' to 50' high	60%

R133419-10 Pre-Engineered Steel Buildings

These buildings are manufactured by many companies and normally erected by franchised dealers throughout the U.S. The four basic types are: Rigid Frames, Truss type, Post and Beam and the Sloped Beam type. Most popular roof slope is low pitch of 1" in 12". The minimum economical area of these buildings is about 3000 S.F. of floor area. Bay sizes are usually 20' to 24' but can go as high as 30' with heavier girts and purlins. Eave heights are usually 12' to 24' with 18' to 20' most typical.

Material prices shown in the Unit Price section are bare costs for the building shell only and do not include floors, foundations, anchor bolts, interior finishes or utilities. Costs assume at least three bays of 24' each, a 1" in 12" roof slope, and they are based on 30 psf roof load and 20 psf wind load

(wind load is a function of wind speed, building height, and terrain characteristics; this should be determined by a Registered Structural Engineer) and no unusual requirements. Costs include the structural frame, 26 ga. non-insulated colored corrugated or ribbed roofing and siding panels, fasteners, closures, trim and flashing but no allowance for insulation, doors, windows, skylights, gutters or downspouts. Very large projects would generally cost less for materials than the prices shown. For roof panel substitutions and wall panel substitutions, see appropriate Unit Price sections. Conditions at the site, weather, shape and size of the building, and labor availability will affect the erection cost of the building.

R133423-30 Dome Structures

Steel — The four types are Lamella, Schwedler, Arch and Geodesic. For maximum economy, rise should be about 15 to 20% of diameter. Most common diameters are in the 200' to 300' range. Lamella domes weigh about 5 P.S.F. of floor area less than Schwedler domes. Schwedler dome weight in lbs. per S.F. approaches .046 times the diameter. Domes below 125' diameter weigh .07 times diameter and the cost per ton of steel is higher. See R051223-20 for estimating weight.

Wood — Small domes are of sawn lumber, larger ones are laminated. In larger sizes, triaxial and triangular cost about the same; radial domes cost more. Radial domes are economical in the 60' to 70' diameter range. Most economical range of all types is 80' to 200' diameters. Diameters can

run over 400'. All costs are quoted above the foundation. Prices include 2" decking and a tension tie ring in place.

Plywood — Stock prefab geodesic domes are available with diameters from 24' to 60'.

Fiberglass — Aluminum framed translucent sandwich panels with spans from 5' to 45' are commercially available.

Aluminum — Stressed skin aluminum panels form geodesic domes with spans ranging from 82' to 232'. An aluminum space truss, triangulated or nontriangulated, with aluminum or clear acrylic closure panels can be used for clear spans of 40' to 415'.

R142000-10 Freight Elevators

Capacities run from 2,000 lbs. to over 100,000 lbs. with 3,000 lbs. to 10,000 lbs. most common. Travel speeds are generally lower and control less

intricate than on passenger elevators. Costs in the Unit Price sections are for hydraulic and geared elevators.

R142000-20 Elevator Selective Costs See R142000-40 for cost development.

A. Base Unit	Passenger		Freight		Hospital	
	Hydraulic	Electric	Hydraulic	Electric	Hydraulic	Electric
Capacity	1,500 lb.	2,000 lb.	2,000 lb.	4,000 lb.	4,000 lb.	4,000 lb.
Speed	100 F.P.M.	200 F.P.M.	100 F.P.M.	200 F.P.M.	100 F.P.M.	200 F.P.M.
#Stops/Travel Ft.	2/12	4/40	2/20	4/40	2/20	4/40
Push Button Oper.	Yes	Yes	Yes	Yes	Yes	Yes
Telephone Box & Wire	"	"	"	"	"	"
Emergency Lighting	"	"	No	No	"	"
Cab	Plastic Lam. Walls	Plastic Lam. Walls	Painted Steel	Painted Steel	Plastic Lam. Walls	Plastic Lam. Walls
Cove Lighting	Yes	Yes	No	No	Yes	Yes
Floor	V.C.T.	V.C.T.	Wood w/Safety Treads	Wood w/Safety Treads	V.C.T.	V.C.T.
Doors, & Speedside Slide	Yes	Yes	Yes	Yes	Yes	Yes
Gates, Manual	No	No	No	No	No	No
Signals, Lighted Buttons	Car and Hall	Car and Hall	Car and Hall	Car and Hall	Car and Hall	Car and Hall
O.H. Geared Machine	N.A.	Yes	N.A.	Yes	N.A.	Yes
Variable Voltage Contr.	"	"	N.A.	"	"	"
Emergency Alarm	Yes	"	Yes	"	Yes	"
Class "A" Loading	N.A.	N.A.	"	"	N.A.	N.A.

R142000-30 Passenger Elevators

Electric elevators are used generally but hydraulic elevators can be used for lifts up to 70' and where large capacities are required. Hydraulic speeds are limited to 200 F.P.M. but cars are self leveling at the stops. On low rises, hydraulic installation runs about 15% less than standard electric types but on higher rises this installation cost advantage is reduced. Maintenance of hydraulic elevators is about the same as electric type but underground portion is not included in the maintenance contract.

In electric elevators there are several control systems available, the choice of which will be based upon elevator use, size, speed and cost criteria. The two types of drives are geared for low speeds and gearless for 450 F.P.M. and over.

The tables on the preceding pages illustrate typical installed costs of the various types of elevators available.

R142000-40 Elevator Cost Development

To price a new car or truck from the factory, you must start with the manufacturer's basic model, then add or exchange optional equipment and features. The same is true for pricing elevators.

Example:

Requirement: One-passenger elevator, five-story hydraulic, 2,500 lb. capacity, 12' floor to floor, speed 150 F.P.M., emergency power switching and maintenance contract.

Description	Adjustment
A. Base Elevator: Hydraulic Passenger, 1500 lb. Capacity, 100 fpm, 2 Stops, Standard Finish	1 Ea.
B. Capacity Adjustment (2,500 lb.)	1 Ea.
C. Excess Travel Adjustment: 48' Total Travel (4 x 12') minus 12' Base Unit Travel =	36 V.L.F.
D. Stops Adjustment: 5 Total Stops minus 2 Stops (Base Unit) =	3 Stops
E. Speed Adjustment (150 F.P.M.)	1 Ea.
F. Options:	
1. Intercom Service	1 Ea.
2. Emergency Power Switching, Automatic	1 Ea.
3. Stainless Steel Entrance Doors	5 Ea.
4. Maintenance Contract (12 Months)	1 Ea.
5. Position Indicator for main floor level (none indicated in Base Unit)	1 Ea.

R143110-10 Escalators

Moving stairs can be used for buildings where 600 or more people are to be carried to the second floor or beyond. Freight cannot be carried on escalators and at least one elevator must be available for this function.

Carrying capacity is 5,000 to 8,000 people per hour. Power requirement is 2 to 3 KW per hour and incline angle is 30°.

Conveying Equipment**R1432 Moving Walks****R143210-20 Moving Ramps and Walks**

These are a specialized form of conveyor 3' to 6' wide with capacities of 3,600 to 18,000 persons per hour. Maximum speed is 140 F.P.M. and normal incline is 0° to 15°.

Local codes will determine the maximum angle. Outdoor units would require additional weather protection.

Plumbing**R2201 Operation & Maintenance of Plumbing****R220102-20 Labor Adjustment Factors**

Labor Adjustment Factors are provided for Divisions 21, 22, and 23 to assist the mechanical estimator account for the various complexities and special conditions of any particular project. While a single percentage has been entered on each line of Division 22 01 02.20, it should be understood that these are just suggested midpoints of ranges of values commonly used by mechanical estimators. They may be increased or decreased depending on the severity of the special conditions.

The group for "existing occupied buildings", has been the subject of requests for explanation. Actually there are two stages to this group: buildings that are existing and "finished" but unoccupied, and those that also are occupied. Buildings that are "finished" may result in higher labor costs due to the

workers having to be more careful not to damage finished walls, ceilings, floors, etc. and may necessitate special protective coverings and barriers. Also corridor bends and doorways may not accommodate long pieces of pipe or larger pieces of equipment. Work above an already hung ceiling can be very time consuming. The addition of occupants may force the work to be done on premium time (nights and/or weekends), eliminate the possible use of some preferred tools such as pneumatic drivers, powder charged drivers etc. The estimator should evaluate the access to the work area and just how the work is going to be accomplished to arrive at an increase in labor costs over "normal" new construction productivity.

R220105-10 Demolition (Selective vs. Removal for Replacement)

Demolition can be divided into two basic categories.

One type of demolition involves the removal of material with no concern for its replacement. The labor-hours to estimate this work are found under "Selective Demolition" in the Fire Protection, Plumbing and HVAC Divisions. It is selective in that individual items or all the material installed as a system or trade grouping such as plumbing or heating systems are removed. This may be accomplished by the easiest way possible, such as sawing, torch cutting, or sledge hammer as well as simple unbolting.

The second type of demolition is the removal of some item for repair or replacement. This removal may involve careful draining, opening of unions,

disconnecting and tagging of electrical connections, capping of pipes/ducts to prevent entry of debris or leakage of the material contained as well as transport of the item away from its in-place location to a truck/dumpster. An approximation of the time required to accomplish this type of demolition is to use half of the time indicated as necessary to install a new unit. For example; installation of a new pump might be listed as requiring 6 labor-hours so if we had to estimate the removal of the old pump we would allow an additional 3 hours for a total of 9 hours. That is, the complete replacement of a defective pump with a new pump would be estimated to take 9 labor-hours.

R221113-50 Pipe Material Considerations

1. Malleable fittings should be used for gas service.
2. Malleable fittings are used where there are stresses/strains due to expansion and vibration.
3. Cast fittings may be broken as an aid to disassembling of heating lines frozen by long use, temperature and minerals.
4. Cast iron pipe is extensively used for underground and submerged service.
5. Type M (light wall) copper tubing is available in hard temper only and is used for nonpressure and less severe applications than K and L.

6. Type L (medium wall) copper tubing, available hard or soft for interior service.
7. Type K (heavy wall) copper tubing, available in hard or soft temper for use where conditions are severe. For underground and interior service.
8. Hard drawn tubing requires fewer hangers or supports but should not be bent. Silver brazed fittings are recommended, however soft solder is normally used.
9. Type DMV (very light wall) copper tubing designed for drainage, waste and vent plus other non-critical pressure services.

Domestic/Imported Pipe and Fittings Cost

The prices shown in this publication for steel/cast iron pipe and steel, cast iron, malleable iron fittings are based on domestic production sold at the normal trade discounts. The above listed items of foreign manufacture may be available at prices of 1/3 to 1/2 those shown. Some imported items after minor machining or finishing operations are being sold as domestic to further complicate the system.

Caution: Most pipe prices in this book also include a coupling and pipe hangers which for the larger sizes can add significantly to the per foot cost and should be taken into account when comparing "book cost" with quoted supplier's cost.

R224000-40 Plumbing Fixture Installation Time

Item	Rough-In	Set	Total Hours	Item	Rough-In	Set	Total Hours
Bathtub	5	5	10	Shower head only	2	1	3
Bathtub and shower, cast iron	6	6	12	Shower drain	3	1	4
Fire hose reel and cabinet	4	2	6	Shower stall, slate		15	15
Floor drain to 4 inch diameter	3	1	4	Slop sink	5	3	8
Grease trap, single, cast iron	5	3	8	Test 6 fixtures			14
Kitchen gas range		4	4	Urinal, wall	6	2	8
Kitchen sink, single	4	4	8	Urinal, pedestal or floor	6	4	10
Kitchen sink, double	6	6	12	Water closet and tank	4	3	7
Laundry tubs	4	2	6	Water closet and tank, wall hung	5	3	8
Lavatory wall hung	5	3	8	Water heater, 45 gals. gas, automatic	5	2	7
Lavatory pedestal	5	3	8	Water heaters, 65 gals. gas, automatic	5	2	7
Shower and stall	6	4	10	Water heaters, electric, plumbing only	4	2	6

Fixture prices in front of book are based on the cost per fixture set in place. The rough-in cost, which must be added for each fixture, includes carrier, if required, some supply, waste and vent pipe connecting fittings and stops. The lengths of rough-in pipe are nominal runs which would connect

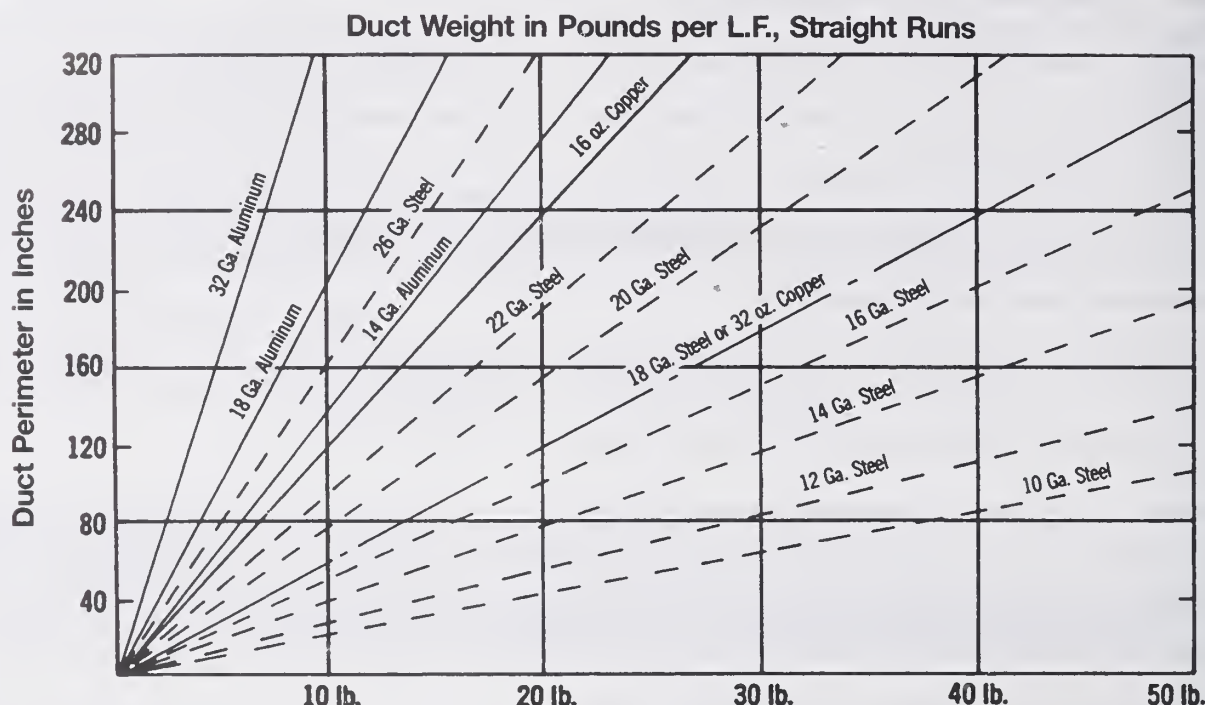
to the larger runs and stacks. The supply runs and DWV runs and stacks must be accounted for in separate entries. In the eastern half of the United States it is common for the plumber to carry these to a point 5' outside the building.

R224000-50 Water Cooler Application

Type of Service	Requirement
Office, School or Hospital	12 persons per gallon per hour
Office, Lobby or Department Store	4 or 5 gallons per hour per fountain
Light manufacturing	7 persons per gallon per hour
Heavy manufacturing	5 persons per gallon per hour
Hot heavy manufacturing	4 persons per gallon per hour
Hotel	.08 gallons per hour per room
Theatre	1 gallon per hour per 100 seats

Heating, Ventilating & A.C. R2331 HVAC Ducts & Casings

R233100-20 Ductwork



Add to the above for fittings; 90° elbow is 3 L.F.; 45° elbow is 2.5 L.F.; offset is 4 L.F.; transition offset is 6 L.F.; square-to-round transition is 4 L.F.;

90° reducing elbow is 5 L.F. For bracing and waste, add 20% to aluminum and copper, 15% to steel.

Heating, Ventilating & A.C. R2334 HVAC Fans

R233400-10 Recommended Ventilation Air Changes

Table below lists range of time in minutes per change for various types of facilities.

Assembly Halls	2-10	Dance Halls	2-10	Laundries	1-3
Auditoriums	2-10	Dining Rooms	3-10	Markets	2-10
Bakeries	2-3	Dry Cleaners	1-5	Offices	2-10
Banks	3-10	Factories	2-5	Pool Rooms	2-5
Bars	2-5	Garages	2-10	Recreation Rooms	2-10
Beauty Parlors	2-5	Generator Rooms	2-5	Sales Rooms	2-10
Boiler Rooms	1-5	Gymnasiums	2-10	Theaters	2-8
Bowling Alleys	2-10	Kitchens-Hospitals	2-5	Toilets	2-5
Churches	5-10	Kitchens-Restaurant	1-3	Transformer Rooms	1-5

CFM air required for changes = Volume of room in cubic feet ÷ Minutes per change.

Heating, Ventilating & A.C. R2350 Central Heating Equipment

R235000-35 Heating (42° degrees latitude)

$$\text{Approximate S.F. radiation} = \frac{\text{S.F. sash}}{2} + \frac{\text{S.F. wall + roof — sash}}{20} + \frac{\text{C.F. building}}{200}$$

R235000-50 Factor for Determining Heat Loss for Various Types of Buildings

General: While the most accurate estimates of heating requirements would naturally be based on detailed information about the building being considered, it is possible to arrive at a reasonable approximation using the following procedure:

1. Calculate the cubic volume of the room or building.
2. Select the appropriate factor from Table 1 below. Note that the factors apply only to inside temperatures listed in the first column and to 0° F outside temperature.
3. If the building has bad north and west exposures, multiply the heat loss factor by 1.1.
4. If the outside design temperature is other than 0° F, multiply the factor from Table 1 by the factor from Table 2.
5. Multiply the cubic volume by the factor selected from Table 1. This will give the estimated BTUH heat loss which must be made up to maintain inside temperature.

Table 1 — Building Type	Conditions	Qualifications	Loss Factor*
Factories & Industrial Plants General Office Areas at 70° F	One Story	Skylight in Roof No Skylight in Roof	6.2 5.7
	Multiple Story	Two Story	4.6
		Three Story	4.3
		Four Story	4.1
		Five Story	3.9
		Six Story	3.6
	All Walls Exposed	Flat Roof Heated Space Above	6.9 5.2
	One Long Warm Common Wall	Flat Roof Heated Space Above	6.3 4.7
	Warm Common Walls on Both Long Sides	Flat Roof	5.8
		Heated Space Above	4.1
Warehouses at 60° F	All Walls Exposed	Skylights in Roof No Skylight in Roof Heated Space Above	5.5 5.1 4.0
		Skylight in Roof No Skylight in Roof Heated Space Above	5.0 4.9 3.4
		Skylight in Roof No Skylight in Roof Heated Space Above	4.7 4.4 3.0
	One Long Warm Common Wall	Skylight in Roof No Skylight in Roof Heated Space Above	5.0 4.9 3.4
		Skylight in Roof No Skylight in Roof Heated Space Above	4.7 4.4 3.0
		Skylight in Roof No Skylight in Roof Heated Space Above	4.7 4.4 3.0
	Warm Common Walls on Both Long Sides	Skylight in Roof No Skylight in Roof Heated Space Above	4.7 4.4 3.0
		Skylight in Roof No Skylight in Roof Heated Space Above	4.7 4.4 3.0
		Skylight in Roof No Skylight in Roof Heated Space Above	4.7 4.4 3.0

*Note: This table tends to be conservative particularly for new buildings designed for minimum energy consumption.

Table 2 — Outside Design Temperature Correction Factor (for Degrees Fahrenheit)									
Outside Design Temperature	50	40	30	20	10	0	-10	-20	-30
Correction Factor	.29	.43	.57	.72	.86	1.00	1.14	1.28	1.43

Heating, Ventilating & A.C. R2356 Solar Energy Heating Equipment

R235616-60 Solar Heating (Space and Hot Water)

Collectors should face as close to due South as possible, however, variations of up to 20 degrees on either side of true South are acceptable. Local climate and collector type may influence the choice between east or west deviations. Obviously they should be located so they are not shaded from the sun's rays. Incline collectors at a slope of latitude minus 5 degrees for domestic hot water and latitude plus 15 degrees for space heating.

Flat plate collectors consist of a number of components as follows: Insulation to reduce heat loss through the bottom and sides of the collector. The enclosure which contains all the components in this assembly is usually weatherproof and prevents dust, wind and water from coming in contact with the absorber plate. The cover plate usually consists of one or more layers of a variety of glass or plastic and reduces the reradiation by creating an air space which traps the heat between the cover and the absorber plates.

The absorber plate must have a good thermal bond with the fluid passages. The absorber plate is usually metallic and treated with a surface coating which improves absorptivity. Black or dark paints or selective coatings are used for this purpose, and the design of this passage and plate combination helps determine a solar system's effectiveness.

Heat transfer fluid passage tubes are attached above and below or integral with an absorber plate for the purpose of transferring thermal energy from the absorber plate to a heat transfer medium. The heat exchanger is a device for transferring thermal energy from one fluid to another.

Piping and storage tanks should be well insulated to minimize heat losses.

Size domestic water heating storage tanks to hold 20 gallons of water per user, minimum, plus 10 gallons per dishwasher or washing machine. For domestic water heating an optimum collector size is approximately 3/4 square foot of area per gallon of water storage. For space heating of residences and small commercial applications the collector is commonly sized between 30% and 50% of the internal floor area. For space heating of large commercial applications, collector areas less than 30% of the internal floor area can still provide significant heat reductions.

A supplementary heat source is recommended for Northern states for December through February.

The solar energy transmission per square foot of collector surface varies greatly with the material used. Initial cost, heat transmittance and useful life are obviously interrelated.

Heating, Ventilating & A.C. R2360 Central Cooling Equipment

R236000-20 Air Conditioning Requirements

BTUs per hour per S.F. of floor area and S.F. per ton of air conditioning.

Type of Building	BTU/Hr per S.F.	S.F. per Ton	Type of Building	BTU/Hr per S.F.	S.F. per Ton	Type of Building	BTU/Hr per S.F.	S.F. per Ton
Apartments, Individual	26	450	Dormitory, Rooms	40	300	Libraries	50	240
Corridors	22	550	Corridors	30	400	Low Rise Office, Exterior	38	320
Auditoriums & Theaters	40	300/18*	Dress Shops	43	280	Interior	33	360
Banks	50	240	Drug Stores	80	150	Medical Centers	28	425
Barber Shops	48	250	Factories	40	300	Motels	28	425
Bars & Taverns	133	90	High Rise Office—Ext. Rms.	46	263	Office (small suite)	43	280
Beauty Parlors	66	180	Interior Rooms	37	325	Post Office, Individual Office	42	285
Bowling Alleys	68	175	Hospitals, Core	43	280	Central Area	46	260
Churches	36	330/20*	Perimeter	46	260	Residences	20	600
Cocktail Lounges	68	175	Hotel, Guest Rooms	44	275	Restaurants	60	200
Computer Rooms	141	85	Corridors	30	400	Schools & Colleges	46	260
Dental Offices	52	230	Public Spaces	55	220	Shoe Stores	55	220
Dept. Stores, Basement	34	350	Industrial Plants, Offices	38	320	Shop'g. Ctrs., Supermarkets	34	350
Main Floor	40	300	General Offices	34	350	Retail Stores	48	250
Upper Floor	30	400	Plant Areas	40	300	Specialty	60	200

*Persons per ton

12,000 BTU = 1 ton of air conditioning

R260519-91 Maximum Circuit Length (approximate) for Various Power Requirements Assuming THW, Copper Wire @ 75°C, Based Upon a 4% Voltage Drop

Maximum Circuit Length: Table R260519-91 indicates typical maximum installed length a circuit can have and still maintain an adequate voltage level at the point of use. The circuit length is similar to the conduit length.

If the circuit length for an ampere load and a copper wire size exceeds the length obtained from Table R260519-91, use the next largest wire size to compensate voltage drop.

Example: A 130 ampere load at 480 volts, 3 phase, 3 wire with No. 1 wire can be run a maximum of 555 L.F. and provide satisfactory operation. If the same load is to be wired at the end of a 625 L.F. circuit, then a larger wire must be used.

Amperes	Wire Size	Maximum Circuit Length in Feet				
		2 Wire, 1 Phase		3 Wire, 3 Phase		
		120V	240V	240V	480V	600V
15	14*	50	105	120	240	300
	14	50	100	120	235	295
20	12*	60	125	145	290	360
	12	60	120	140	280	350
30	10*	65	130	155	305	380
	10	65	130	150	300	375
50	8	60	125	145	285	355
65	6	75	150	175	345	435
85	4	90	185	210	425	530
115	2	110	215	250	500	620
130	1	120	240	275	555	690
150	1/0	130	260	305	605	760
175	2/0	140	285	330	655	820
200	3/0	155	315	360	725	904
230	4/0	170	345	395	795	990
255	250	185	365	420	845	1055
285	300	195	395	455	910	1140
310	350	210	420	485	975	1220
380	500	245	490	565	1130	1415

*Solid Conductor

Note: The circuit length is the one-way distance between the origin and the load.

R260519-92 Minimum Copper and Aluminum Wire Size Allowed for Various Types of Insulation

Minimum Wire Sizes									
Amperes	Copper		Aluminum		Amperes	Copper		Aluminum	
	THW THWN or XHHW	THHN XHHW *	THW XHHW	THHN XHHW *		THW THWN or XHHW	THHN XHHW *	THW XHHW	THHN XHHW *
15A	#14	#14	#12	#12	195	3/0	2/0	250kcmil	4/0
20	#12	#12	#10	#10	200	3/0	3/0	250kcmil	4/0
25	#10	#10	#10	#10	205	4/0	3/0	250kcmil	4/0
30	#10	#10	#8	#8	225	4/0	3/0	300kcmil	250kcmil
40	#8	#8	#8	#8	230	4/0	4/0	300kcmil	250kcmil
45	#8	#8	#6	#8	250	250kcmil	4/0	350kcmil	300kcmil
50	#8	#8	#6	#6	255	250kcmil	4/0	400kcmil	300kcmil
55	#6	#8	#4	#6	260	300kcmil	4/0	400kcmil	350kcmil
60	#6	#6	#4	#6	270	300kcmil	250kcmil	400kcmil	350kcmil
65	#6	#6	#4	#4	280	300kcmil	250kcmil	500kcmil	350kcmil
75	#4	#6	#3	#4	285	300kcmil	250kcmil	500kcmil	400kcmil
85	#4	#4	#2	#3	290	350kcmil	250kcmil	500kcmil	400kcmil
90	#3	#4	#2	#2	305	350kcmil	300kcmil	500kcmil	400kcmil
95	#3	#4	#1	#2	310	350kcmil	300kcmil	500kcmil	500kcmil
100	#3	#3	#1	#2	320	400kcmil	300kcmil	600kcmil	500kcmil
110	#2	#3	1/0	#1	335	400kcmil	350kcmil	600kcmil	500kcmil
115	#2	#2	1/0	#1	340	500kcmil	350kcmil	600kcmil	500kcmil
120	#1	#2	1/0	1/0	350	500kcmil	350kcmil	700kcmil	500kcmil
130	#1	#2	2/0	1/0	375	500kcmil	400kcmil	700kcmil	600kcmil
135	1/0	#1	2/0	1/0	380	500kcmil	400kcmil	750kcmil	600kcmil
150	1/0	#1	3/0	2/0	385	600kcmil	500kcmil	750kcmil	600kcmil
155	2/0	1/0	3/0	3/0	420	600kcmil	500kcmil		700kcmil
170	2/0	1/0	4/0	3/0	430		500kcmil		750kcmil
175	2/0	2/0	4/0	3/0	435		600kcmil		750kcmil
180	3/0	2/0	4/0	4/0	475		600kcmil		

*Dry Locations Only

Notes:

1. Size #14 to 4/0 is in AWG units (American Wire Gauge).
2. Size 250 to 750 is in kcmil units (Thousand Circular Mils).
3. Use next higher ampere value if exact value is not listed in table.
4. For loads that operate continuously increase ampere value by 25% to obtain proper wire size.
5. Refer to Table R260519-91 for the maximum circuit length for the various size wires.
6. Table R260519-92 has been written for estimating purpose only, based on ambient temperature of 30°C (86° F); for ambient temperature other than 30°C (86° F), ampacity correction factors will be applied.

R260533-22 Conductors in Conduit

Table below lists maximum number of conductors for various sized conduit using THW,TW or THWN insulations.

Copper Wire Size	Conduit Size																										
	1/2"			3/4"			1"			1-1/4"			1-1/2"			2"			2-1/2"			3"		3-1/2"		4"	
	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	THW	THWN	THW	THWN	THW	THWN
#14	9	6	13	15	10	24	25	16	39	44	29	69	60	40	94	99	65	154	142	93		143		192			
#12	7	4	10	12	8	18	19	13	29	35	24	51	47	32	70	78	53	114	111	76	164	117		157			
#10	5	4	6	9	6	11	15	11	18	26	19	32	36	26	44	60	43	73	85	61	104	95	160	127		163	
#8	2	1	3	4	3	5	7	5	9	12	10	16	17	13	22	28	22	36	40	32	51	49	79	66	106	85	136
#6		1	1		2	4		4	6		7	11		10	15		16	26		23	37	36	57	48	76	62	98
#4		1	1		1	2		3	4		5	7		7	9		12	16		17	22	27	35	36	47	47	60
#3		1	1		1	1		2	3		4	6		6	8		10	13		15	19	23	29	31	39	40	51
#2		1	1		1	1		2	3		4	5		5	7		9	11		13	16	20	25	27	33	34	43
#1					1	1		1	1		3	3		4	5		6	8		9	12	14	18	19	25	25	32
1/0					1	1		1	1		2	3		3	4		5	7		8	10	12	15	16	21	21	27
2/0					1	1		1	1		1	2		3	3		5	6		7	8	10	13	14	17	18	22
3/0					1	1		1	1		1	1		2	3		4	5		6	7	9	11	12	14	15	18
4/0						1		1	1		1	1		1	2		3	4		5	6	7	9	10	12	13	15
250 kcmil								1	1		1	1		1	1		2	3		4	4	6	7	8	10	10	12
300								1	1		1	1		1	1		2	3		3	4	5	6	7	8	9	11
350									1		1	1		1	1		1	2		3	3	4	5	6	7	8	9
400											1	1		1	1		1	1		2	3	4	5	5	6	7	8
500											1	1		1	1		1	1		1	2	3	4	4	5	6	7
600												1		1	1		1	1		1	1	3	3	4	4	5	5
700														1	1		1	1		1	1	2	3	3	4	4	5
750														1	1		1	1		1	1	2	2	3	3	4	4

R312316-40 · Excavating

The selection of equipment used for structural excavation and bulk excavation or for grading is determined by the following factors.

1. Quantity of material
2. Type of material
3. Depth or height of cut
4. Length of haul
5. Condition of haul road
6. Accessibility of site
7. Moisture content and dewatering requirements
8. Availability of excavating and hauling equipment

Some additional costs must be allowed for hand trimming the sides and bottom of concrete pours and other excavation below the general excavation.

Number of B.C.Y. per truck = 1.5 C.Y. bucket × 8 passes = 12 loose C.Y.

$$= 12 \times \frac{100}{118} = 10.2 \text{ B.C.Y. per truck}$$

Truck Haul Cycle:

Load truck, 8 passes	=	4 minutes
Haul distance, 1 mile	=	9 minutes
Dump time	=	2 minutes
Return, 1 mile	=	7 minutes
Spot under machine	=	1 minute

23 minute cycle

Add the mobilization and demobilization costs to the total excavation costs. When equipment is rented for more than three days, there is often no mobilization charge by the equipment dealer. On larger jobs outside of urban areas, scrapers can move earth economically provided a dump site or fill area and adequate haul roads are available. Excavation within sheeting bracing or cofferdam bracing is usually done with a clamshell and production

When planning excavation and fill, the following should also be considered.

1. Swell factor
2. Compaction factor
3. Moisture content
4. Density requirements

A typical example for scheduling and estimating the cost of excavation of a 15' deep basement on a dry site when the material must be hauled off the site is outlined below.

Assumptions:

1. Swell factor, 18%
2. No mobilization or demobilization
3. Allowance included for idle time and moving on job
4. No dewatering, sheeting, or bracing
5. No truck spotter or hand trimming

Fleet Haul Production per day in B.C.Y.

$$4 \text{ trucks} \times \frac{50 \text{ min. hour}}{23 \text{ min. haul cycle}} \times 8 \text{ hrs.} \times 10.2 \text{ B.C.Y.}$$

$$= 4 \times 2.2 \times 8 \times 10.2 = 718 \text{ B.C.Y./day}$$

is low, since the clamshell may have to be guided by hand between the bracing. When excavating or filling an area enclosed with a wellpoint system, add 10% to 15% to the cost to allow for restricted access. When estimating earth excavation quantities for structures, allow work space outside the building footprint for construction of the foundation and a slope of 1:1 unless sheeting is used.

R312316-45 Excavating Equipment

The table below lists THEORETICAL hourly production in C.Y./hr. bank measure for some typical excavation equipment. Figures assume 50 minute hours, 83% job efficiency, 100% operator efficiency, 90° swing and

properly sized hauling units, which must be modified for adverse digging and loading conditions. Actual production costs in the front of the book average about 50% of the theoretical values listed here.

Equipment	Soil Type	B.C.Y. Weight	% Swell	1 C.Y.	1-1/2 C.Y.	2 C.Y.	2-1/2 C.Y.	3 C.Y.	3-1/2 C.Y.	4 C.Y.
Hydraulic Excavator "Backhoe" 15' Deep Cut	Moist loam, sandy clay	3400 lb.	40%	165	195	200	275	330	385	440
	Sand and gravel	3100	18	140	170	225	240	285	330	380
	Common earth	2800	30	150	180	230	250	300	350	400
	Clay, hard, dense	3000	33	120	140	190	200	240	260	320
Power Shovel Optimum Cut (Ft.)	Moist loam, sandy clay	3400	40	170 (6.0)	245 (7.0)	295 (7.8)	335 (8.4)	385 (8.8)	435 (9.1)	475 (9.4)
	Sand and gravel	3100	18	165 (6.0)	225 (7.0)	275 (7.8)	325 (8.4)	375 (8.8)	420 (9.1)	460 (9.4)
	Common earth	2800	30	145 (7.8)	200 (9.2)	250 (10.2)	295 (11.2)	335 (12.1)	375 (13.0)	425 (13.8)
	Clay, hard, dense	3000	33	120 (9.0)	175 (10.7)	220 (12.2)	255 (13.3)	300 (14.2)	335 (15.1)	375 (16.0)
Drag Line Optimum Cut (Ft.)	Moist loam, sandy clay	3400	40	130 (6.6)	180 (7.4)	220 (8.0)	250 (8.5)	290 (9.0)	325 (9.5)	385 (10.0)
	Sand and gravel	3100	18	130 (6.6)	175 (7.4)	210 (8.0)	245 (8.5)	280 (9.0)	315 (9.5)	375 (10.0)
	Common earth	2800	30	110 (8.0)	160 (9.0)	190 (9.9)	220 (10.5)	250 (11.0)	280 (11.5)	310 (12.0)
	Clay, hard, dense	3000	33	90 (9.3)	130 (10.7)	160 (11.8)	190 (12.3)	225 (12.8)	250 (13.3)	280 (12.0)
Loading Tractors				Wheel Loaders				Track Loaders		
				3 C.Y.	4 C.Y.	6 C.Y.	8 C.Y.	2-1/4 C.Y.	3 C.Y.	4 C.Y.
				260	340	510	690	135	180	250
				245	320	480	650	130	170	235
				230	300	460	620	120	155	220
				200	270	415	560	110	145	200
				180	245	380	520	100	130	180

R312319-90 Wellpoints

A single stage wellpoint system is usually limited to dewatering an average 15' depth below normal ground water level. Multi-stage systems are employed for greater depth with the pumping equipment installed only at the lowest header level. Ejectors with unlimited lift capacity can be economical when two or more stages of wellpoints can be replaced or when horizontal clearance is restricted, such as in deep trenches or tunneling projects, and where low water flows are expected. Wellpoints are usually spaced on 2-1/2' to 10' centers along a header pipe. Wellpoint spacing, header size, and pump size are all determined by the expected flow as dictated by soil conditions.

In almost all soils encountered in wellpoint dewatering, the wellpoints may be jetted into place. Cemented soils and stiff clays may require sand wicks about 12" in diameter around each wellpoint to increase efficiency and eliminate weeping into the excavation. These sand wicks require 1/2 to 3 C.Y. of washed filter sand and are installed by using a 12" diameter steel casing and hole puncher jetted into the ground 2' deeper than the wellpoint. Rock may require predrilled holes.

Labor required for the complete installation and removal of a single stage wellpoint system is in the range of 3/4 to 2 labor-hours per linear foot of header, depending upon jetting conditions, wellpoint spacing, etc.

Continuous pumping is necessary except in some free draining soil where temporary flooding is permissible (as in trenches which are backfilled after each day's work). Good practice requires provision of a stand-by pump during the continuous pumping operation.

Systems for continuous trenching below the water table should be installed three to four times the length of expected daily progress to ensure uninterrupted digging, and header pipe size should not be changed during the job.

For pervious free draining soils, deep wells in place of wellpoints may be economical because of lower installation and maintenance costs. Daily production ranges between two to three wells per day, for 25' to 40' depths, to one well per day for depths over 50'.

Detailed analysis and estimating for any dewatering problem is available at no cost from wellpoint manufacturers. Major firms will quote "sufficient equipment" quotes or their affiliates offer lump sum proposals to cover complete dewatering responsibility.

Description for 200' System with 8" Header		Quantities
Equipment & Material	Wellpoints 25' long, 2" diameter @ 5' O.C.	40 Each
	Header pipe, 8" diameter	200 L.F.
	Discharge pipe, 8" diameter	100 L.F.
	8" valves	3 Each
	Combination jetting & wellpoint pump (standby)	1 Each
	Wellpoint pump, 8" diameter	1 Each
	Transportation to and from site	1 Day
	Fuel for 30 days x 60 gal./day	1800 Gallons
	Lubricants for 30 days x 16 lbs./day	480 Lbs.
	Sand for points	40 C.Y.
Labor	Technician to supervise installation	1 Week
	Labor for installation and removal of system	300 Labor-hours
	4 Operators straight time 40 hrs./wk. for 4.33 wks.	693 Hrs.
	4 Operators overtime 2 hrs./wk. for 4.33 wks.	35 Hrs.

R312323-30 Compacting Backfill

Compaction of fill in embankments, around structures, in trenches, and under slabs is important to control settlement. Factors affecting compaction are:

1. Soil gradation
2. Moisture content
3. Equipment used
4. Depth of fill per lift
5. Density required

Production Rate:

$$\frac{1.75' \text{ plate width} \times 50 \text{ E.P.M.} \times 50 \text{ min./hr.} \times .67' \text{ lift}}{27 \text{ C.F. per C.Y.}} = 108.5 \text{ C.Y./hr.}$$

Production Rate for 4 Passes:

$$\frac{108.5 \text{ C.Y.}}{4 \text{ passes}} = 27.125 \text{ C.Y./hr.} \times 8 \text{ hrs.} = 217 \text{ C.Y./day}$$

Example:

Compact granular fill around a building foundation using a 21" wide x 24" vibratory plate in 8" lifts. Operator moves at 50 F.P.M. working a 50 minute hour to develop 95% Modified Proctor Density with 4 passes.

R314116-40 Wood Sheet Piling

Wood sheet piling may be used for depths to 20' where there is no ground water. If moderate ground water is encountered Tongue & Groove

sheeting will help to keep it out. When considerable ground water is present, steel sheeting must be used.

For estimating purposes on trench excavation, sizes are as follows:

Depth	Sheeting	Wales	Braces	B.F. per S.F.
To 8'	3 x 12's	6 x 8's, 2 line	6 x 8's, @ 10'	4.0 @ 8'
8' x 12'	3 x 12's	10 x 10's, 2 line	10 x 10's, @ 9'	5.0 average
12' to 20'	3 x 12's	12 x 12's, 3 line	12 x 12's, @ 8'	7.0 average

Sheeting to be toed in at least 2' depending upon soil conditions. A five person crew with an air compressor and sheeting driver can drive and brace 440 SF/day at 8' deep, 360 SF/day at 12' deep, and 320 SF/day at 16' deep.

For normal soils, piling can be pulled in 1/3 the time to install. Pulling difficulty increases with the time in the ground. Production can be increased by high pressure jetting.

R314116-45 Steel Sheet Piling

Limiting weights are 22 to 38#/S.F. of wall surface with 27#/S.F. average for usual types and sizes. (Weights of piles themselves are from 30.7#/L.F. to 57#/L.F. but they are 15" to 21" wide.) Lightweight sections 12" to 28" wide from 3 ga. to 12 ga. thick are also available for shallow excavations. Piles may be driven two at a time with an impact or vibratory hammer (use vibratory to pull) hung from a crane without leads. A reasonable estimate of the life of steel sheet piling is 10 uses with up to 125 uses possible if a vibratory hammer is used. Used piling costs from 50% to 80% of new piling depending on location and market conditions. Sheet piling and H piles

can be rented for about 30% of the delivered mill price for the first month and 5% per month thereafter. Allow 1 labor-hour per pile for cleaning and trimming after driving. These costs increase with depth and hydrostatic head. Vibratory drivers are faster in wet granular soils and are excellent for pile extraction. Pulling difficulty increases with the time in the ground and may cost more than driving. It is often economical to abandon the sheet piling, especially if it can be used as the outer wall form. Allow about 1/3 additional length or more for toeing into ground. Add bracing, waler and strut costs. Waler costs can equal the cost per ton of sheeting.

R314513-90 Vibroflotation and Vibro Replacement Soil Compaction

Vibroflotation is a proprietary system of compacting sandy soils in place to increase relative density to about 70%. Typical bearing capacities attained will be 6000 psf for saturated sand and 12,000 psf for dry sand. Usual range is 4000 to 8000 psf capacity. Costs in the front of the book are for a vertical foot of compacted cylinder 6' to 10' in diameter.

Vibro replacement is a proprietary system of improving cohesive soils in place to increase bearing capacity. Most silts and clays above or below the water table can be strengthened by installation of stone columns.

The process consists of radial displacement of the soil by vibration. The created hole is then backfilled in stages with coarse granular fill which is thoroughly compacted and displaced into the surrounding soil in the form of a column.

The total project cost would depend on the number and depth of the compacted cylinders. The installing company guarantees relative soil density of the sand cylinders after compaction and the bearing capacity of the soil after the replacement process. Detailed estimating information is available from the installer at no cost.

R316326-60 Caissons

The three principal types of caissons are:

(1) **Belled Caissons**, which except for shallow depths and poor soil conditions, are generally recommended. They provide more bearing than shaft area. Because of its conical shape, no horizontal reinforcement of the bell is required.

(2) **Straight Shaft Caissons** are used where relatively light loads are to be supported by caissons that rest on high value bearing strata. While the shaft is larger in diameter than for belled types this is more than offset by the saving in time and labor.

(3) **Keyed Caissons** are used when extremely heavy loads are to be carried. A keyed or socketed caisson transfers its load into rock by a combination of end-bearing and shear reinforcing of the shaft. The most economical shaft often consists of a steel casing, a steel wide flange core and concrete. Allowable compressive stresses of .225 f_c for concrete, 16,000 psi for the wide flange core, and 9,000 psi for the steel casing are commonly used. The usual range of shaft diameter is 18" to 84". The number of sizes specified for any one project should be limited due to the problems of casing and auger storage. When hand work is to be performed, shaft diameters should not be less than 32". When inspection of borings is required a minimum shaft diameter of 30" is recommended. Concrete caissons are intended to be poured against earth excavation so permanent forms which add to cost should not be used if the excavation is clean and the earth sufficiently impervious to prevent excessive loss of concrete.

Soil Conditions for Belling		
Good	Requires Handwork	Not Recommended
Clay	Hard Shale	Silt
Sandy Clay	Limestone	Sand
Silty Clay	Sandstone	Gravel
Clayey Silt	Weathered Mica	Igneous Rock
Hard-pan		
Soft Shale		
Decomposed Rock		

Exterior Improvements**R3292 Turf & Grasses****R329219-50 Seeding**

The type of grass is determined by light, shade and moisture content of soil plus intended use. Fertilizer should be disked 4" before seeding. For steep slopes disk five tons of mulch and lay two tons of hay or straw on surface per acre after seeding. Surface mulch can be staked, lightly disked or tar emulsion sprayed. Material for mulch can be wood chips, peat moss, partially

rotted hay or straw, wood fibers and sprayed emulsions. Hemp seed blankets with fertilizer are also available. For spring seeding, watering is necessary. Late fall seeding may have to be reseeded in the spring. Hydraulic seeding, power mulching, and aerial seeding can be used on large areas.

R331113-80 Piping Designations

There are several systems currently in use to describe pipe and fittings. The following paragraphs will help to identify and clarify classifications of piping systems used for water distribution.

Piping may be classified by schedule. Piping schedules include 5S, 10S, 10, 20, 30, Standard, 40, 60, Extra Strong, 80, 100, 120, 140, 160 and Double Extra Strong. These schedules are dependent upon the pipe wall thickness. The wall thickness of a particular schedule may vary with pipe size.

Ductile iron pipe for water distribution is classified by Pressure Classes such as Class 150, 200, 250, 300 and 350. These classes are actually the rated water working pressure of the pipe in pounds per square inch (psi). The pipe in these pressure classes is designed to withstand the rated water working pressure plus a surge allowance of 100 psi.

The American Water Works Association (AWWA) provides standards for various types of **plastic pipe**. C-900 is the specification for polyvinyl chloride (PVC) piping used for water distribution in sizes ranging from 4" through 12". C-901 is the specification for polyethylene (PE) pressure pipe, tubing and fittings used for water distribution in sizes ranging from 1/2" through 3". C-905 is the specification for PVC piping sizes 14" and greater.

PVC pressure-rated pipe is identified using the standard dimensional ratio (SDR) method. This method is defined by the American Society for Testing and Materials (ASTM) Standard D 2241. This pipe is available in SDR numbers 64, 41, 32.5, 26, 21, 17, and 13.5. Pipe with an SDR of 64 will have the thinnest wall while pipe with an SDR of 13.5 will have the thickest wall. When the pressure rating (PR) of a pipe is given in psi, it is based on a line supplying water at 73 degrees F.

The National Sanitation Foundation (NSF) seal of approval is applied to products that can be used with potable water. These products have been tested to ANSI/NSF Standard 14.

Valves and strainers are classified by American National Standards Institute (ANSI) Classes. These Classes are 125, 150, 200, 250, 300, 400, 600, 900, 1500 and 2500. Within each class there is an operating pressure range dependent upon temperature. Design parameters should be compared to the appropriate material dependent, pressure-temperature rating chart for accurate valve selection.

Transportation**R3472 Railway Construction****R347216-10 Single Track R.R. Siding**

The costs for a single track RR siding in the Unit Price Section include the components shown in the table below.

Description of Component	Qty. per L.F. of Track	Unit
Ballast, 1-1/2" crushed stone	.667	C.Y.
6" x 8" x 8'-6" Treated timber ties, 22" O.C.	.545	Ea.
Tie plates, 2 per tie	1.091	Ea.
Track rail	2.000	L.F.
Spikes, 6", 4 per tie	2.182	Ea.
Splice bars w/ bolts, lock washers & nuts, @ 33' O.C.	.061	Pair
Crew B-14 @ 57 L.F./Day	.018	Day

R347216-20 Single Track, Steel Ties, Concrete Bed

The costs for a R.R. siding with steel ties and a concrete bed in the Unit Price section include the components shown in the table below.

Description of Component	Qty. per L.F. of Track	Unit
Concrete bed, 9' wide, 10" thick	.278	C.Y.
Ties, W6x16 x 6'-6" long, @ 30" O.C.	.400	Ea.
Tie plates, 4 per tie	1.600	Ea.
Track rail	2.000	L.F.
Tie plate bolts, 1", 8 per tie	3.200	Ea.
Splice bars w/bolts, lock washers & nuts, @ 33' O.C.	.061	Pair
Crew B-14 @ 22 L.F./Day	.045	Day

Change Orders

Change Order Considerations

A change order is a written document, usually prepared by the design professional, and signed by the owner, the architect/engineer, and the contractor. A change order states the agreement of the parties to: an addition, deletion, or revision in the work; an adjustment in the contract sum, if any; or an adjustment in the contract time, if any. Change orders, or "extras" in the construction process occur after execution of the construction contract and impact architects/engineers, contractors, and owners.

Change orders that are properly recognized and managed can ensure orderly, professional, and profitable progress for all who are involved in the project. There are many causes for change orders and change order requests. In all cases, change orders or change order requests should be addressed promptly and in a precise and prescribed manner. The following paragraphs include information regarding change order pricing and procedures.

The Causes of Change Orders

Reasons for issuing change orders include:

- Unforeseen field conditions that require a change in the work
- Correction of design discrepancies, errors, or omissions in the contract documents
- Owner-requested changes, either by design criteria, scope of work, or project objectives
- Completion date changes for reasons unrelated to the construction process
- Changes in building code interpretations, or other public authority requirements that require a change in the work
- Changes in availability of existing or new materials and products

Procedures

Properly written contract documents must include the correct change order procedures for all parties—owners, design professionals and contractors—to follow in order to avoid costly delays and litigation.

Being "in the right" is not always a sufficient or acceptable defense. The contract provisions requiring notification and documentation must be adhered to within a defined or reasonable time frame.

The appropriate method of handling change orders is by a written proposal and acceptance by all parties involved. Prior to starting work on a project, all parties should identify their authorized agents who may sign and accept change orders, as well as any limits placed on their authority.

Time may be a critical factor when the need for a change arises. For such cases, the contractor might be directed to proceed on a "time and materials" basis, rather than wait for all paperwork to be processed—a delay that could impede progress. In this situation, the contractor must still follow the prescribed change order procedures including, but not limited to, notification and documentation.

All forms used for change orders should be dated and signed by the proper authority. Lack of documentation can be very costly, especially if legal judgments are to be made, and if certain field personnel are no longer available. For time and material change orders, the contractor should keep accurate daily records of all labor and material allocated to the change.

Owners or awarding authorities who do considerable and continual building construction (such as the federal government) realize the inevitability of change orders for numerous reasons, both predictable and unpredictable. As a result, the federal government, the American Institute of Architects (AIA), the Engineers Joint Contract Documents Committee (EJCDC) and other contractor, legal, and technical organizations have developed standards and procedures to be followed by all parties to achieve contract continuance and timely completion, while being financially fair to all concerned.

In addition to the change order standards put forth by industry associations, there are also many books available on the subject.

Pricing Change Orders

When pricing change orders, regardless of their cause, the most significant factor is when the change occurs. The need for a change may be perceived in the field or requested by the architect/engineer *before* any of the actual installation has begun, or may evolve or appear *during* construction when the item of work in question is partially installed. In the latter cases, the original sequence of construction is disrupted, along with all contiguous and supporting systems. Change orders cause the greatest impact when they occur *after* the installation has been completed and must be uncovered, or even replaced. Post-completion changes may be caused by necessary design changes, product failure, or changes in the owner's requirements that are not discovered until the building or the systems begin to function.

Specified procedures of notification and record keeping must be adhered to and enforced regardless of the stage of construction: *before*, *during*, or *after* installation. Some bidding documents anticipate change orders by requiring that unit prices including overhead and profit percentages—for additional as well as deductible changes—be listed. Generally these unit prices do not fully take into account the ripple effect, or impact on other trades, and should be used for general guidance only.

When pricing change orders, it is important to classify the time frame in which the change occurs. There are two basic time frames for change orders: *pre-installation change orders*, which occur before the start of construction, and *post-installation change orders*, which involve reworking after the original installation. Change orders that occur between these stages may be priced according to the extent of work completed using a combination of techniques developed for pricing *pre-* and *post-installation* changes.

The following factors are the basis for a check list to use when preparing a change order estimate.

Factors To Consider When Pricing Change Orders

As an estimator begins to prepare a change order, the following questions should be reviewed to determine their impact on the final price.

General

- Is the change order work pre-installation or post-installation?

Change order work costs vary according to how much of the installation has been completed. Once workers have the project scoped in their minds, even though they have not started, it can be difficult to refocus.

Consequently they may spend more than the normal amount of time understanding the change. Also, modifications to work in place, such as trimming or refitting, usually take more time than was initially estimated. The greater the amount of work in place, the more reluctant workers are to change it. Psychologically they may resent the change and as a result the rework takes longer than normal. Post-installation change order estimates must include demolition of existing work as required to accomplish the change. If the work is performed at a later time, additional obstacles, such as building finishes, may be present which must be protected. Regardless of whether the change

occurs pre-installation or post-installation, attempt to isolate the identifiable factors and price them separately. For example, add shipping costs that may be required pre-installation or any demolition required post-installation. Then analyze the potential impact on productivity of psychological and/or learning curve factors and adjust the output rates accordingly. One approach is to break down the typical workday into segments and quantify the impact on each segment. The following chart may be useful as a guide:

Activities (Productivity) Expressed as Percentages of a Workday			
Task	Means Mechanical Cost Data (for New Construction)	Pre-Installation Change Orders	Post-Installation Change Orders
1. Study plans	3%	6%	6%
2. Material procurement	3%	3%	3%
3. Receiving and storing	3%	3%	3%
4. Mobilization	5%	5%	5%
5. Site movement	5%	5%	8%
6. Layout and marking	8%	10%	12%
7. Actual installation	64%	59%	54%
8. Clean-up	3%	3%	3%
9. Breaks—non-productive	6%	6%	6%
Total	100%	100%	100%

Change Order Installation Efficiency

The labor-hours expressed (for new construction) are based on average installation time, using an efficiency level of approximately 60%–65%. For change order situations, adjustments to this efficiency level should reflect the daily labor-hour allocation for that particular occurrence.

If any of the specific percentages expressed in the above chart do not apply to a particular project situation, then those percentage points should be reallocated to the appropriate task(s). Example: Using data for new construction, assume there is no new material being utilized. The percentages for Tasks 2 and 3 would therefore be reallocated to other tasks. If the time required for Tasks 2 and 3 can now be applied to installation, we can add the time allocated for *Material Procurement* and *Receiving and Storing* to the *Actual Installation* time for new construction, thereby increasing the Actual Installation percentage.

This chart shows that, due to reduced productivity, labor costs will be higher than those for new construction by 5%–15% for pre-installation change orders and by 15%–25% for post-installation change orders. Each job and change order is unique and must be examined individually. Many factors, covered elsewhere in this section, can each have a significant impact on productivity and change order costs. All such factors should be considered in every case.

- *Will the change substantially delay the original completion date?*

A significant change in the project may cause the original completion date to be extended. The extended schedule may subject the contractor to new wage rates dictated by relevant labor contracts. Project supervision and other project overhead must also be extended beyond the original completion date. The schedule extension may also put installation into a new weather season. For example, underground piping scheduled for October installation was delayed until January. As a result, frost penetrated the trench area, thereby changing the degree of difficulty of the task. Changes and delays may have a ripple effect throughout the project. This effect must be analyzed and negotiated with the owner.

- *What is the net effect of a deduct change order?*

In most cases, change orders resulting in a deduction or credit reflect only bare costs. The contractor may retain the overhead and profit based on the original bid.

Materials

- *Will you have to pay more or less for the new material, required by the change order, than you paid for the original purchase?*

The same material prices or discounts will usually apply to materials purchased for change orders as new construction. In some instances, however, the contractor may forfeit the advantages of competitive pricing for change orders. Consider the following example:

A contractor purchased over \$20,000 worth of fan coil units for an installation, and obtained the maximum discount. Some time later it was determined the project required an additional matching unit. The contractor has to purchase this unit from the original supplier to ensure a match. The supplier at this time may not discount the unit because of the small quantity, and the fact that he is no longer in a competitive situation. The impact of quantity on purchase can add between 0% and 25% to material prices and/or subcontractor quotes.

- *If materials have been ordered or delivered to the job site, will they be subject to a cancellation charge or restocking fee?*

Check with the supplier to determine if ordered materials are subject to a cancellation charge. Delivered materials not used as result of a change order may be subject to a restocking fee if returned to the supplier. Common restocking charges run between 20% and 40%. Also, delivery charges to return the goods to the supplier must be added.

Labor

- *How efficient is the existing crew at the actual installation?*

Is the same crew that performed the initial work going to do the change order? Possibly the change consists of the installation of a unit identical to one already installed; therefore, the change should take less time. Be sure to consider this potential productivity increase and modify the productivity rates accordingly.

- *If the crew size is increased, what impact will that have on supervision requirements?*

Under most bargaining agreements or management practices, there is a point at which a working foreman is replaced by a nonworking foreman. This replacement increases project overhead by adding a nonproductive worker. If additional workers are added to accelerate the project or to perform changes while maintaining the schedule, be sure to add additional supervision time if warranted. Calculate the hours involved and the additional cost directly if possible.

- *What are the other impacts of increased crew size?*

The larger the crew, the greater the potential for productivity to decrease. Some of the factors that cause this productivity loss are: overcrowding (producing restrictive conditions in the working space), and possibly a shortage of any special tools and equipment required. Such factors affect not only the crew working on the elements directly involved in the change order, but other crews whose movement may also be hampered.

As the crew increases, check its basic composition for changes by the addition or deletion of apprentices or nonworking foreman, and quantify the potential effects of equipment shortages or other logistical factors.

- *As new crews, unfamiliar with the project, are brought onto the site, how long will it take them to become oriented to the project requirements?*

The orientation time for a new crew to become 100% effective varies with the site and type of project. Orientation is easiest at a new construction site, and most difficult at existing, very restrictive renovation sites. The type of work also affects orientation time. When all elements of the work are exposed, such as concrete or masonry work, orientation is decreased. When the work is concealed or less visible, such as existing electrical systems, orientation takes longer. Usually orientation can be accomplished in one day or less. Costs for added orientation should be itemized and added to the total estimated cost.

- *How much actual production can be gained by working overtime?*

Short term overtime can be used effectively to accomplish more work in a day. However, as overtime is scheduled to run beyond several weeks, studies have shown marked decreases in output. The following chart shows the effect of long term overtime on worker efficiency. If the anticipated change requires extended overtime to keep the job on schedule, these factors can be used as a guide to predict the impact on time and cost. Add project overhead, particularly supervision, that may also be incurred.

Days per Week	Hours per Day	Production Efficiency					Payroll Cost Factors	
		1 Week	2 Weeks	3 Weeks	4 Weeks	Average 4 Weeks	@ 1-1/2 Times	@ 2 Times
5	8	100%	100%	100%	100%	100%	100%	100%
	9	100	100	95	90	96.25	105.6	111.1
	10	100	95	90	85	91.25	110.0	120.0
	11	95	90	75	65	81.25	113.6	127.3
	12	90	85	70	60	76.25	116.7	133.3
6	8	100	100	95	90	96.25	108.3	116.7
	9	100	95	90	85	92.50	113.0	125.9
	10	95	90	85	80	87.50	116.7	133.3
	11	95	85	70	65	78.75	119.7	139.4
	12	90	80	65	60	73.75	122.2	144.4
7	8	100	95	85	75	88.75	114.3	128.6
	9	95	90	80	70	83.75	118.3	136.5
	10	90	85	75	65	78.75	121.4	142.9
	11	85	80	65	60	72.50	124.0	148.1
	12	85	75	60	55	68.75	126.2	152.4

Effects of Overtime

Caution: Under many labor agreements, Sundays and holidays are paid at a higher premium than the normal overtime rate.

The use of long-term overtime is counterproductive on almost any construction job; that is, the longer the period of overtime, the lower the actual production rate. Numerous studies have been conducted, and while they have resulted in slightly different numbers, all reach the same conclusion. The figure above tabulates the effects of overtime work on efficiency.

As illustrated, there can be a difference between the *actual* payroll cost per hour and the *effective* cost per hour for overtime work. This is due to the reduced production efficiency with the increase in weekly hours beyond 40. This difference between actual and effective cost results from overtime work over a prolonged period. Short-term overtime work does not result in as great a reduction in efficiency and, in such cases, effective cost may not vary significantly from the actual payroll cost. As the total hours per week are increased on a regular basis, more time is lost due to fatigue, lowered morale, and an increased accident rate.

As an example, assume a project where workers are working 6 days a week, 10 hours per day. From the figure above (based on productivity studies), the average effective productive hours over a 4-week period are:

$$0.875 \times 60 = 52.5$$

Depending upon the locale and day of week, overtime hours may be paid at time and a half or double time. For time and a half, the overall (average) *actual* payroll cost (including regular and overtime hours) is determined as follows:

$$\frac{40 \text{ reg. hrs.} + (20 \text{ overtime hrs.} \times 1.5)}{60 \text{ hrs.}} = 1.167$$

Based on 60 hours, the payroll cost per hour will be 116.7% of the normal rate at 40 hours per week. However, because the effective production (efficiency) for 60 hours is reduced to the equivalent of 52.5 hours, the effective cost of overtime is calculated as follows:

For time and a half:

$$\frac{40 \text{ reg. hrs.} + (20 \text{ overtime hrs.} \times 1.5)}{52.5 \text{ hrs.}} = 1.33$$

Installed cost will be 133% of the normal rate (for labor).

Thus, when figuring overtime, the actual cost per unit of work will be higher than the apparent overtime payroll dollar increase, due to the reduced productivity of the longer workweek. These efficiency calculations are true only for those cost factors determined by hours worked. Costs that are applied weekly or monthly, such as equipment rentals, will not be similarly affected.

Equipment

- What equipment is required to complete the change order?

Change orders may require extending the rental period of equipment already on the job site, or the addition of special equipment brought in to accomplish the change work. In either case, the additional rental charges and operator labor charges must be added.

Summary

The preceding considerations and others you deem appropriate should be analyzed and applied to a change order estimate. The impact of each should be quantified and listed on the estimate to form an audit trail.

Change orders that are properly identified, documented, and managed help to ensure the orderly, professional and profitable progress of the work. They also minimize potential claims or disputes at the end of the project.



Estimating Tips

- The cost figures in this Square Foot Cost section were derived from approximately 11,000 projects contained in the RSMeans database of completed construction projects. They include the contractor's overhead and profit, but do not generally include architectural fees or land costs. The figures have been adjusted to January of the current year. New projects are added to our files each year, and outdated projects are discarded. For this reason, certain costs may not show a uniform annual progression. In no case are all subdivisions of a project listed.
- These projects were located throughout the U.S. and reflect a tremendous variation in square foot (S.F.) and cubic foot (C.F.) costs. This is due to differences, not only in labor and material costs, but also in individual owners' requirements. For instance, a bank in a large city would have different features than one in a rural area. This is true of all the different types of buildings analyzed. Therefore, caution should be exercised when using these square foot costs. For example, for courthouses, costs in the database are local courthouse costs and will not apply to the larger, more elaborate federal courthouses. As a general rule, the projects in the 1/4 column do not include any site work or equipment, while the projects in the 3/4 column may include both equipment and site work. The median figures do not generally include site work.
- None of the figures "go with" any others. All individual cost items were computed and tabulated separately. Thus, the sum of the median figures for plumbing, HVAC and electrical will not normally total up to the total mechanical and electrical costs arrived at by separate analysis and tabulation of the projects.
- Each building was analyzed as to total and component costs and percentages. The figures were arranged in ascending order with the results tabulated as shown. The 1/4 column shows that 25% of the projects had lower costs and 75% had higher. The 3/4 column shows that 75% of the projects had lower costs and 25% had higher. The median column shows that 50% of the projects had lower costs and 50% had higher.
- There are two times when square foot costs are useful. The first is in the conceptual stage when no details are available. Then square foot costs make a useful starting point. The second is after the bids are in and the costs can be worked back into their appropriate categories for information purposes. As soon as details become available in the project design, the square foot approach should be discontinued and the project priced as to its particular components. When more precision is required, or for estimating the replacement cost of specific buildings, the current edition of *RSMeans Square Foot Costs* should be used.
- In using the figures in this section, it is recommended that the median column be used for preliminary figures if no additional information is available. The median figures, when multiplied by the total city construction cost index figures (see city cost indexes) and then multiplied by the project size modifier at the end of this section, should present a fairly accurate base figure, which would then have to be adjusted in view of the estimator's experience, local economic conditions, code requirements, and the owner's particular requirements. There is no need to factor the percentage figures, as these should remain constant from city to city. All tabulations mentioning air conditioning had at least partial air conditioning.
- The editors of this book would greatly appreciate receiving cost figures on one or more of your recent projects, which would then be included in the averages for next year. All cost figures received will be kept confidential, except that they will be averaged with other similar projects to arrive at square foot cost figures for next year's book. See the last page of the book for details and the discount available for submitting one or more of your projects.

50 17 | Square Foot Costs

50 17 00 S.F. Costs			UNIT	UNIT COSTS			% OF TOTAL			
				1/4	MEDIAN	3/4	1/4	MEDIAN	3/4	
01	0010	APARTMENTS Low Rise (1 to 3 story)	S.F.	73	92.50	123				01
	0020	Total project cost	C.F.	6.55	8.70	10.75				
	0100	Site work	S.F.	5.35	8.55	15	6.05%	10.55%	13.95%	
	0500	Masonry		1.44	3.55	5.80	1.54%	3.92%	6.50%	
	1500	Finishes		7.75	10.65	13.15	9.05%	10.75%	12.85%	
	1800	Equipment		2.40	3.63	5.40	2.71%	3.99%	5.95%	
	2720	Plumbing		5.70	7.30	9.30	6.65%	8.95%	10.05%	
	2770	Heating, ventilating, air conditioning		3.63	4.47	6.55	4.20%	5.60%	7.60%	
	2900	Electrical		4.25	5.65	7.65	5.20%	6.65%	8.35%	
	3100	Total: Mechanical & Electrical		15.10	19.60	24	16.05%	18.20%	23%	
	9000	Per apartment unit, total cost	Apt.	68,000	104,000	153,500				
9500	Total: Mechanical & Electrical	"	12,900	20,300	26,500					
02	0010	APARTMENTS Mid Rise (4 to 7 story)	S.F.	97	117	144				02
	0020	Total project costs	C.F.	7.55	10.45	14.30				
	0100	Site work	S.F.	3.88	7.85	15.15	5.25%	6.70%	9.20%	
	0500	Masonry		4.05	8.90	12.15	5.10%	7.25%	10.50%	
	1500	Finishes		12.70	17	20	10.70%	13.50%	17.70%	
	1800	Equipment		2.71	4.22	5.55	2.54%	3.47%	4.31%	
	2500	Conveying equipment		2.20	2.70	3.26	2.05%	2.27%	2.69%	
	2720	Plumbing		5.70	9.10	9.65	5.70%	7.20%	8.95%	
	2900	Electrical		6.40	8.70	10.55	6.35%	7.20%	8.95%	
	3100	Total: Mechanical & Electrical		20.50	25.50	31	18.25%	21%	23%	
	9000	Per apartment unit, total cost	Apt.	109,500	129,500	214,000				
9500	Total: Mechanical & Electrical	"	20,700	24,000	25,100					
03	0010	APARTMENTS High Rise (8 to 24 story)	S.F.	110	127	152				03
	0020	Total project costs	C.F.	10.70	12.45	14.65				
	0100	Site work	S.F.	3.99	6.45	9	2.58%	4.84%	6.15%	
	0500	Masonry		6.35	11.55	14.40	4.74%	9.65%	11.05%	
	1500	Finishes		12.20	15.25	18	9.75%	11.80%	13.70%	
	1800	Equipment		3.54	4.35	5.75	2.78%	3.49%	4.35%	
	2500	Conveying equipment		2.50	3.79	5.15	2.23%	2.78%	3.37%	
	2720	Plumbing		7.05	9.55	11.70	6.80%	7.20%	10.45%	
	2900	Electrical		7.55	9.55	12.90	6.45%	7.65%	8.80%	
	3100	Total: Mechanical & Electrical		22.50	29	35	17.95%	22.50%	24.50%	
	9000	Per apartment unit, total cost	Apt.	114,000	126,000	174,500				
9500	Total: Mechanical & Electrical	"	22,700	28,200	29,900					
04	0010	AUDITORIUMS	S.F.	115	158	230				04
	0020	Total project costs	C.F.	7.15	9.95	14.30				
	2720	Plumbing	S.F.	6.80	10	11.95	5.85%	7.20%	8.70%	
	2900	Electrical		9.20	13.30	22	6.85%	9.50%	11.40%	
	3100	Total: Mechanical & Electrical		61	81.50	99	24.50%	27.50%	31%	
05	0010	AUTOMOTIVE SALES	S.F.	84.50	115	143				05
	0020	Total project costs	C.F.	5.55	6.70	8.65				
	2720	Plumbing	S.F.	3.86	6.70	7.30	2.89%	6.05%	6.50%	
	2770	Heating, ventilating, air conditioning		5.95	9.10	9.80	4.61%	10%	10.35%	
	2900	Electrical		6.80	10.70	15.70	7.25%	8.80%	12.15%	
	3100	Total: Mechanical & Electrical		19	30.50	36.50	17.30%	20.50%	22%	
06	0010	BANKS	S.F.	166	207	263				06
	0020	Total project costs	C.F.	11.85	16.10	21				
	0100	Site work	S.F.	19	30	42.50	7.90%	12.95%	17%	
	0500	Masonry		7.55	16.15	29	3.36%	6.90%	10.05%	
	1500	Finishes		14.85	22.50	28	5.85%	8.65%	11.70%	
	1800	Equipment		6.25	13.75	28	1.34%	5.55%	10.50%	
	2720	Plumbing		5.20	7.45	10.85	2.82%	3.90%	4.93%	
	2770	Heating, ventilating, air conditioning		9.85	13.20	17.60	4.86%	7.15%	8.50%	
	2900	Electrical		15.75	21	27.50	8.25%	10.20%	12.20%	
	3100	Total: Mechanical & Electrical		38	50.50	61	16.55%	19.45%	24%	
	3500	See also division 11020 & 11030 (MF2004 11 16 00 & 11 17 00)								

50 17 | Square Foot Costs

50 17 00 S.F. Costs			UNIT	UNIT COSTS			% OF TOTAL			
				1/4	MEDIAN	3/4	1/4	MEDIAN	3/4	
13	0010	CHURCHES	S.F.	112	143	185				13
	0020	Total project costs	C.F.	6.90	8.75	11.50				
	1800	Equipment	S.F.	1.21	3.17	6.80	.93%	2.11%	4.31%	
	2720	Plumbing	↓	4.35	6.10	8.95	3.51%	4.96%	6.25%	
	2770	Heating, ventilating, air conditioning		10.15	13.25	18.75	7.50%	10%	12%	
	2900	Electrical		9.55	12.95	17.65	7.30%	8.80%	10.90%	
	3100	Total: Mechanical & Electrical	↓	29.50	39	51.50	18.30%	22%	24.50%	
	3500	See also division 11040 (MF2004 11 91 00)								
15	0010	CLUBS, COUNTRY	S.F.	120	144	182				15
	0020	Total project costs	C.F.	9.65	11.75	16.25				
	2720	Plumbing	S.F.	7.25	10.75	24.50	5.60%	7.90%	10%	
	2900	Electrical	↓	9.40	12.90	16.80	7%	8.95%	11%	
	3100	Total: Mechanical & Electrical	↓	50	62.50	66	19%	26.50%	29.50%	
17	0010	CLUBS, SOCIAL Fraternal	S.F.	101	138	184				17
	0020	Total project costs	C.F.	5.95	9.05	10.80				
	2720	Plumbing	S.F.	6	7.50	11.30	5.60%	6.90%	8.55%	
	2770	Heating, ventilating, air conditioning	↓	7.05	10.50	13.45	8.20%	9.25%	14.40%	
	2900	Electrical		6.85	11.80	13.55	5.95%	9.30%	10.55%	
	3100	Total: Mechanical & Electrical	↓	37	40	51	21%	23%	23.50%	
18	0010	CLUBS, Y.M.C.A.	S.F.	132	164	247				18
	0020	Total project costs	C.F.	5.55	9.25	13.80				
	2720	Plumbing	S.F.	7.60	15.10	16.95	5.65%	7.60%	10.85%	
	2900	Electrical	↓	9.85	12.75	22	6.45%	8%	9.20%	
	3100	Total: Mechanical & Electrical	↓	40	45.50	74.50	20.50%	21.50%	28.50%	
19	0010	COLLEGES Classrooms & Administration	S.F.	116	164	212				19
	0020	Total project costs	C.F.	6.95	12.35	19.85				
	0500	Masonry	S.F.	9.15	16.85	20.50	5.10%	8.05%	10.50%	
	2720	Plumbing	↓	5.20	12.65	23.50	5.10%	6.60%	8.95%	
	2900	Electrical		9.85	15.55	21.50	7.70%	9.85%	12%	
	3100	Total: Mechanical & Electrical	↓	41.50	57	76	23%	28%	31.50%	
21	0010	COLLEGES Science, Engineering, Laboratories	S.F.	225	264	305				21
	0020	Total project costs	C.F.	12.95	18.85	21.50				
	1800	Equipment	S.F.	6.10	28.50	31	2%	6.45%	12.65%	
	2900	Electrical	↓	18.60	26.50	40.50	7.10%	9.40%	12.10%	
	3100	Total: Mechanical & Electrical	↓	69	82	127	28.50%	31.50%	41%	
	3500	See also division 11600 (MF2004 11 53 00)								
23	0010	COLLEGES Student Unions	S.F.	144	195	236				23
	0020	Total project costs	C.F.	8	10.50	13				
	3100	Total: Mechanical & Electrical	S.F.	54	58.50	69	23.50%	26%	29%	
25	0010	COMMUNITY CENTERS	S.F.	120	147	199				25
	0020	Total project costs	C.F.	7.75	11.05	14.35				
	1800	Equipment	S.F.	2.40	4.70	7.75	1.47%	3.01%	5.30%	
	2720	Plumbing	↓	5.60	9.85	13.45	4.85%	7%	8.95%	
	2770	Heating, ventilating, air conditioning		8.45	13.10	18.80	6.80%	10.35%	12.90%	
	2900	Electrical		10.05	13.25	19.50	7.15%	8.90%	10.40%	
	3100	Total: Mechanical & Electrical	↓	33	42	60	18.80%	23%	30%	
28	0010	COURT HOUSES	S.F.	171	202	278				28
	0020	Total project costs	C.F.	13.15	15.70	19.80				
	2720	Plumbing	S.F.	8.15	11.35	12.90	5.95%	7.45%	8.20%	
	2900	Electrical	↓	18.20	20.50	30	9.05%	10.65%	12.15%	
	3100	Total: Mechanical & Electrical	↓	51	66.50	73	22.50%	26.50%	30%	
30	0010	DEPARTMENT STORES	S.F.	63.50	85.50	108				30
	0020	Total project costs	C.F.	3.39	4.40	5.95				
	2720	Plumbing	S.F.	1.97	2.49	3.78	1.82%	4.21%	5.90%	
	2770	Heating, ventilating, air conditioning	↓	4.79	8.90	13.35	8.20%	9.10%	14.80%	

50 17 | Square Foot Costs

50 17 00 S.F. Costs			UNIT	UNIT COSTS			% OF TOTAL			
				1/4	MEDIAN	3/4	1/4	MEDIAN	3/4	
30	2900	Electrical	S.F.	7.25	9.95	11.75	9.05%	12.15%	14.95%	30
	3100	Total: Mechanical & Electrical	↓	12.80	16.35	28.50	13.20%	21.50%	50%	
31	0010	DORMITORIES Low Rise (1 to 3 story)	S.F.	120	166	208				31
	0020	Total project costs	C.F.	6.80	10.95	16.45				
	2720	Plumbing	S.F.	7.20	9.65	12.20	8.05%	9%	9.65%	
	2770	Heating, ventilating, air conditioning	↓	7.65	9.15	12.20	4.61%	8.05%	10%	
	2900	Electrical		7.95	12.10	16.55	6.40%	8.65%	9.50%	
	3100	Total: Mechanical & Electrical	↓	41.50	44.50	69	22%	25%	27%	
	9000	Per bed, total cost	Bed	51,000	56,500	121,000				
32	0010	DORMITORIES Mid Rise (4 to 8 story)	S.F.	147	192	237				32
	0020	Total project costs	C.F.	16.25	17.85	21.50				
	2900	Electrical	S.F.	15.65	17.80	24	8.20%	10.20%	11.95%	
	3100	Total: Mechanical & Electrical	"	44	87.50	88.50	25%	30.50%	35.50%	
	9000	Per bed, total cost	Bed	21,000	47,900	277,000				
34	0010	FACTORIES	S.F.	55.50	83	128				34
	0020	Total project costs	C.F.	3.58	5.35	8.85				
	0100	Site work	S.F.	6.35	11.60	18.40	6.95%	11.45%	17.95%	
	2720	Plumbing	↓	3.01	5.60	9.25	3.73%	6.05%	8.10%	
	2770	Heating, ventilating, air conditioning		5.85	8.40	11.35	5.25%	8.45%	11.35%	
	2900	Electrical		6.95	10.95	16.75	8.10%	10.50%	14.20%	
	3100	Total: Mechanical & Electrical	↓	19.80	30.50	40	21%	28.50%	35.50%	
36	0010	FIRE STATIONS	S.F.	111	153	209				36
	0020	Total project costs	C.F.	6.45	8.90	11.85				
	0500	Masonry	S.F.	15.10	29	37.50	7.50%	10.95%	15.55%	
	1140	Roofing	↓	3.61	9.75	11.10	1.90%	4.94%	5.05%	
	1580	Painting		2.80	4.18	4.28	1.37%	1.57%	2.07%	
	1800	Equipment		1.38	2.64	4.87	.62%	1.63%	3.42%	
	2720	Plumbing		6.20	9.85	13.95	5.85%	7.35%	9.45%	
	2770	Heating, ventilating, air conditioning	↓	6.15	9.95	15.35	5.15%	7.40%	9.40%	
	2900	Electrical		7.95	14.10	19	6.90%	8.60%	10.60%	
	3100	Total: Mechanical & Electrical	↓	40.50	52	59	18.40%	23%	27%	
37	0010	FRATERNITY HOUSES & Sorority Houses	S.F.	111	142	195				37
	0020	Total project costs	C.F.	11	11.50	13.85				
	2720	Plumbing	S.F.	8.35	9.60	17.55	6.80%	8%	10.85%	
	2900	Electrical	↓	7.30	15.80	19.35	6.60%	9.90%	10.65%	
38	0010	FUNERAL HOMES	S.F.	117	159	289				38
	0020	Total project costs	C.F.	11.90	13.25	25.50				
	2900	Electrical	S.F.	5.15	9.45	10.35	3.58%	4.44%	5.95%	
39	0010	GARAGES, COMMERCIAL (Service)	S.F.	66	102	141				39
	0020	Total project costs	C.F.	4.35	6.40	9.35				
	1800	Equipment	S.F.	3.73	8.40	13.05	2.21%	4.62%	6.80%	
	2720	Plumbing	↓	4.58	7.05	12.85	5.45%	7.85%	10.65%	
	2730	Heating & ventilating		4.51	7.80	9.95	5.25%	6.85%	8.20%	
	2900	Electrical		6.30	9.60	13.80	7.15%	9.25%	10.85%	
	3100	Total: Mechanical & Electrical	↓	11.85	26.50	39	12.35%	17.40%	26%	
40	0010	GARAGES, MUNICIPAL (Repair)	S.F.	97	129	182				40
	0020	Total project costs	C.F.	6.05	7.70	13.25				
	0500	Masonry	S.F.	5.10	17.85	27.50	4.03%	9.15%	12.50%	
	2720	Plumbing	↓	4.36	8.35	15.75	3.59%	6.70%	7.95%	
	2730	Heating & ventilating		7.45	10.80	21	6.15%	7.45%	13.50%	
	2900	Electrical		7.15	11.30	16.40	6.65%	8.15%	11.15%	
	3100	Total: Mechanical & Electrical	↓	33	46	66.50	21.50%	23%	28.50%	
41	0010	GARAGES, PARKING	S.F.	38.50	55	95				41
	0020	Total project costs	C.F.	3.55	4.82	7				

50 17 | Square Foot Costs

50 17 00 S.F. Costs			UNIT	UNIT COSTS			% OF TOTAL			
				1/4	MEDIAN	3/4	1/4	MEDIAN	3/4	
41	2720	Plumbing	S.F.	.65	1.66	2.56	1.72%	2.70%	3.85%	41
	2900	Electrical	↓	2.08	2.74	4	4.52%	5.40%	6.35%	
	3100	Total: Mechanical & Electrical	↓	4.03	5.90	7.35	7%	8.90%	11.05%	
	3200									
	9000	Per car, total cost	Car	16,000	20,000	25,500				
43	0010	GYMNASIUMS	S.F.	105	140	193				43
	0020	Total project costs	C.F.	5.25	7.10	8.75				
	1800	Equipment	S.F.	2.50	4.68	8.45	1.76%	3.26%	6.70%	
	2720	Plumbing	↓	5.75	7.75	10.20	4.65%	6.40%	7.75%	
	2770	Heating, ventilating, air conditioning		6.25	10.90	22	5.15%	9.05%	11.10%	
	2900	Electrical	↓	8.35	11	14.65	6.75%	8.50%	10.30%	
	3100	Total: Mechanical & Electrical	↓	28.50	40	48.50	19.75%	23.50%	29%	
	3500	See also division 11480 (MF2004 11 67 00)								
46	0010	HOSPITALS	S.F.	202	253	350				46
	0020	Total project costs	C.F.	15.30	19.05	27				
	1800	Equipment	S.F.	5.10	9.85	17	.80%	2.53%	4.80%	
	2720	Plumbing	↓	17.40	24.50	31.50	7.60%	9.10%	10.85%	
	2770	Heating, ventilating, air conditioning		25.50	32.50	45.50	7.80%	12.95%	16.65%	
	2900	Electrical	↓	22.50	30	44.50	10%	11.75%	14.10%	
	3100	Total: Mechanical & Electrical	↓	65	90.50	134	28%	33.50%	37%	
	9000	Per bed or person, total cost	Bed	233,500	322,000	371,000				
48	0010	HOUSING For the Elderly	S.F.	99	126	154				48
	0020	Total project costs	C.F.	7.10	9.85	12.55				
	0100	Site work	S.F.	6.90	10.75	15.75	5.05%	7.90%	12.10%	
	0500	Masonry	↓	1.87	11.30	16.50	1.30%	6.05%	11%	
	1800	Equipment		2.40	3.30	5.25	1.88%	3.23%	4.43%	
	2510	Conveying systems		2.24	3.24	4.40	1.78%	2.20%	2.81%	
	2720	Plumbing	↓	7.40	9.40	11.85	8.15%	9.55%	10.50%	
	2730	Heating, ventilating, air conditioning		3.78	5.35	8	3.30%	5.60%	7.25%	
	2900	Electrical	↓	7.40	10.05	12.85	7.30%	8.50%	10.25%	
	3100	Total: Mechanical & Electrical	↓	25.50	31.50	40.50	18.10%	22.50%	29%	
	9000	Per rental unit, total cost	Unit	92,500	108,000	120,000				
	9500	Total: Mechanical & Electrical	"	20,600	23,600	27,600				
50	0010	HOUSING Public (Low Rise)	S.F.	83.50	116	151				50
	0020	Total project costs	C.F.	6.60	9.25	11.50				
	0100	Site work	S.F.	10.60	15.30	25	8.35%	11.75%	16.50%	
	1800	Equipment	↓	2.27	3.70	5.65	2.26%	3.03%	4.24%	
	2720	Plumbing		6	7.95	10.05	7.15%	9.05%	11.60%	
	2730	Heating, ventilating, air conditioning	↓	3.02	5.85	6.40	4.26%	6.05%	6.45%	
	2900	Electrical		5.05	7.50	10.45	5.10%	6.55%	8.25%	
	3100	Total: Mechanical & Electrical	↓	24	31	34.50	14.50%	17.55%	26.50%	
	9000	Per apartment, total cost	Apt.	91,500	104,000	131,000				
51	0010	ICE SKATING RINKS	S.F.	71.50	167	183				51
	0020	Total project costs	C.F.	5.25	5.35	6.20				
	2720	Plumbing	S.F.	2.66	5	5.10	3.12%	3.23%	5.65%	
	2900	Electrical	↓	7.65	11.70	12.40	6.30%	10.15%	15.05%	
52	0010	JAILS	S.F.	185	280	360				52
	0020	Total project costs	C.F.	19.60	27.50	32				
	1800	Equipment	S.F.	8.45	25	42.50	2.80%	6.95%	9.80%	
	2720	Plumbing	↓	21	28	37	7%	8.90%	13.35%	
	2770	Heating, ventilating, air conditioning		19.60	26	50.50	7.50%	9.45%	17.75%	
	2900	Electrical	↓	23	31	39	9.40%	11.70%	15.25%	
53	0010	LIBRARIES	S.F.	140	186	243				53
	0020	Total project costs	C.F.	9.40	11.75	15				

50 17 | Square Foot Costs

50 17 00 S.F. Costs				UNIT	UNIT COSTS			% OF TOTAL		
			1/4		MEDIAN	3/4	1/4	MEDIAN	3/4	
53	0500	Masonry	S.F.	9.30	19	31.50	5.60%	7.15%	10.95%	53
	1800	Equipment		1.88	5.05	7.60	.28%	1.39%	4.07%	
	2720	Plumbing		5.05	7.20	10	3.38%	4.60%	5.70%	
	2770	Heating, ventilating, air conditioning		11.20	19	23	7.80%	10.95%	12.80%	
	2900	Electrical		14.10	18.65	25	8.40%	10.55%	12%	
	3100	Total: Mechanical & Electrical		46	56	65.50	21%	24%	28%	
54	0010	LIVING, ASSISTED	S.F.	127	151	176				54
	0020	Total project costs	C.F.	10.70	12.50	14.20				
	0500	Masonry	S.F.	3.68	4.44	5.45	2.36%	3.16%	3.86%	
	1800	Equipment		2.81	3.35	4.30	2.12%	2.45%	2.87%	
	2720	Plumbing		10.65	14.25	14.75	6.05%	8.15%	10.60%	
	2770	Heating, ventilating, air conditioning		12.65	13.20	14.45	7.95%	9.35%	9.70%	
	2900	Electrical		12.45	14	16.15	9%	9.95%	10.65%	
	3100	Total: Mechanical & Electrical		34	40.50	47	24%	28.50%	31.50%	
55	0010	MEDICAL CLINICS	S.F.	129	159	203				55
	0020	Total project costs	C.F.	9.45	12.25	16.30				
	1800	Equipment	S.F.	1.65	7.35	11.40	1.05%	2.94%	6.35%	
	2720	Plumbing		8.60	12.10	16.15	6.15%	8.40%	10.10%	
	2770	Heating, ventilating, air conditioning		10.25	13.40	19.70	6.65%	8.85%	11.35%	
	2900	Electrical		11.10	15.75	20.50	8.10%	10%	12.20%	
	3100	Total: Mechanical & Electrical		35.50	48	66	22%	27%	33.50%	
	3500	See also division 11700 (MF2004 11 71 00)								
57	0010	MEDICAL OFFICES	S.F.	121	151	185				57
	0020	Total project costs	C.F.	9.05	12.30	16.60				
	1800	Equipment	S.F.	4.01	7.95	11.15	.66%	4.87%	6.50%	
	2720	Plumbing		6.70	10.35	13.95	5.60%	6.80%	8.50%	
	2770	Heating, ventilating, air conditioning		8.10	11.70	15.45	6.10%	8%	9.70%	
	2900	Electrical		9.70	14.20	19.75	7.50%	9.80%	11.70%	
	3100	Total: Mechanical & Electrical		26.50	38.50	55	19.30%	23%	28.50%	
59	0010	MOTELS	S.F.	76.50	111	145				59
	0020	Total project costs	C.F.	6.80	9.15	14.95				
	2720	Plumbing	S.F.	7.75	9.90	11.80	9.45%	10.60%	12.55%	
	2770	Heating, ventilating, air conditioning		4.74	7.05	12.65	5.60%	5.60%	10%	
	2900	Electrical		7.25	9.15	11.40	7.45%	9.05%	10.45%	
	3100	Total: Mechanical & Electrical		21.50	31	53	18.50%	24%	25.50%	
	5000									
	9000	Per rental unit, total cost	Unit	39,000	74,000	80,000				
9500	Total: Mechanical & Electrical	"	7,600	11,500	13,400					
60	0010	NURSING HOMES	S.F.	120	155	193				60
	0020	Total project costs	C.F.	9.45	11.80	16.15				
	1800	Equipment	S.F.	3.28	5	8.40	2%	3.62%	4.99%	
	2720	Plumbing		10.30	15.60	18.80	8.75%	10.10%	12.70%	
	2770	Heating, ventilating, air conditioning		10.85	16.45	22	9.70%	11.45%	11.80%	
	2900	Electrical		11.90	14.95	20.50	9.40%	10.60%	12.50%	
	3100	Total: Mechanical & Electrical		28.50	39.50	66.50	26%	28%	30%	
	9000	Per bed or person, total cost	Bed	53,500	67,000	86,000				
61	0010	OFFICES Low Rise (1 to 4 story)	S.F.	101	132	172				61
	0020	Total project costs	C.F.	7.25	9.95	13.10				
	0100	Site work	S.F.	8.15	14.20	21	5.95%	9.70%	13.55%	
	0500	Masonry		3.92	7.90	14.40	2.61%	5.40%	8.45%	
	1800	Equipment		.91	2.11	5.75	.57%	1.50%	3.42%	
	2720	Plumbing		3.62	5.60	8.20	3.66%	4.50%	6.10%	
	2770	Heating, ventilating, air conditioning		8	11.15	16.35	7.20%	10.30%	11.70%	
	2900	Electrical		8.30	11.85	16.85	7.45%	9.65%	11.40%	
	3100	Total: Mechanical & Electrical		23	31.50	48	18.20%	22%	27%	
62	0010	OFFICES Mid Rise (5 to 10 story)	S.F.	107	130	176				62
	0020	Total project costs	C.F.	7.60	9.70	13.75				

50 17 | Square Foot Costs

50 17 00 S.F. Costs				UNIT	UNIT COSTS			% OF TOTAL			
					1/4	MEDIAN	3/4	1/4	MEDIAN	3/4	
62	2720	Plumbing		S.F.	3.24	5	7.20	2.83%	3.74%	4.50%	62
	2770	Heating, ventilating, air conditioning			8.15	11.65	18.60	7.65%	9.40%	11%	
	2900	Electrical			7.95	10.20	15.40	6.35%	7.80%	10%	
	3100	Total: Mechanical & Electrical		↓	20.50	26.50	50.50	18.95%	21%	27.50%	
63	0010	OFFICES High Rise (11 to 20 story)		S.F.	132	166	204				63
	0020	Total project costs		C.F.	9.20	11.50	16.50				
	2900	Electrical		S.F.	8	9.75	14.50	5.80%	7.85%	10.50%	
	3100	Total: Mechanical & Electrical		↓	26	34.50	58.50	16.90%	23.50%	34%	
64	0010	POLICE STATIONS		S.F.	158	208	265				64
	0020	Total project costs		C.F.	12.60	15.40	21				
	0500	Masonry		S.F.	15.80	26	33	7.80%	9.10%	11.35%	
	1800	Equipment			2.27	11.05	17.50	.98%	3.35%	6.70%	
	2720	Plumbing			8.85	17.60	22	5.65%	6.90%	10.75%	
	2770	Heating, ventilating, air conditioning			12.95	18.35	26	5.85%	10.55%	11.70%	
	2900	Electrical			17.25	25	32.50	9.80%	11.70%	14.50%	
	3100	Total: Mechanical & Electrical		↓	65.50	69	92	28.50%	31.50%	32.50%	
65	0010	POST OFFICES		S.F.	125	154	196				65
	0020	Total project costs		C.F.	7.50	9.50	10.80				
	2720	Plumbing		S.F.	5.05	6.95	8.80	4.24%	5.30%	5.60%	
	2770	Heating, ventilating, air conditioning			7.85	10.85	12.05	6.65%	7.15%	9.35%	
	2900	Electrical			10.30	14.50	17.20	7.25%	9%	11%	
	3100	Total: Mechanical & Electrical		↓	29.50	39	44	16.25%	18.80%	22%	
66	0010	POWER PLANTS		S.F.	865	1,150	2,100				66
	0020	Total project costs		C.F.	24	52	111				
	2900	Electrical		S.F.	61	130	193	9.30%	12.75%	21.50%	
	8100	Total: Mechanical & Electrical		↓	152	495	1,100	32.50%	32.50%	52.50%	
67	0010	RELIGIOUS EDUCATION		S.F.	101	131	161				67
	0020	Total project costs		C.F.	5.60	8	10				
	2720	Plumbing		S.F.	4.20	5.95	8.40	4.40%	5.30%	7.10%	
	2770	Heating, ventilating, air conditioning			10.60	12	16.95	10.05%	11.45%	12.35%	
	2900	Electrical			7.40	11.25	14.85	7.60%	9.05%	10.35%	
	3100	Total: Mechanical & Electrical		↓	32.50	42.50	52	22%	23%	27%	
69	0010	RESEARCH Laboratories & Facilities		S.F.	154	217	315				69
	0020	Total project costs		C.F.	11.20	22	26.50				
	1800	Equipment		S.F.	6.70	13.15	32	.94%	4.58%	9.10%	
	2720	Plumbing			10.95	19.30	31	6.15%	8.30%	10.80%	
	2770	Heating, ventilating, air conditioning			13.55	45.50	54	7.25%	16.50%	17.50%	
	2900	Electrical			18.10	29	47.50	9.55%	11.15%	14.60%	
	3100	Total: Mechanical & Electrical		↓	57.50	102	144	29.50%	37%	41%	
70	0010	RESTAURANTS		S.F.	146	188	245				70
	0020	Total project costs		C.F.	12.25	16.10	21				
	1800	Equipment		S.F.	8.65	23	35	6.10%	13%	15.65%	
	2720	Plumbing			11.55	14	18.40	6.10%	8.15%	9%	
	2770	Heating, ventilating, air conditioning			14.70	20.50	24.50	9.20%	12%	12.40%	
	2900	Electrical			15.40	19	24.50	8.35%	10.55%	11.55%	
	3100	Total: Mechanical & Electrical		↓	47.50	51	66	21%	25%	29.50%	
	9000	Per seat unit, total cost		Seat	5,350	7,125	8,450				
72	0010	RETAIL STORES		S.F.	68	91.50	121				72
	0020	Total project costs		C.F.	4.62	6.60	9.15				
	2720	Plumbing		S.F.	2.47	4.12	7.05	3.26%	4.60%	6.80%	
	2770	Heating, ventilating, air conditioning			5.35	7.30	10.95	6.75%	8.75%	10.15%	
	2900	Electrical			6.15	8.40	12.10	7.25%	9.90%	11.60%	
	3100	Total: Mechanical & Electrical		↓	16.30	21	28	17.05%	21%	23.50%	
74	0010	SCHOOLS Elementary		S.F.	111	138	169				74
	0020	Total project costs		C.F.	7.25	9.30	12.05				
	0500	Masonry		S.F.	7.85	16.95	25	4.89%	10.50%	14%	
	1800	Equipment		↓	2.58	4.93	9.30	1.83%	3.13%	4.61%	

50 17 | Square Foot Costs

50 17 00 S.F. Costs			UNIT	UNIT COSTS			% OF TOTAL			
				1/4	MEDIAN	3/4	1/4	MEDIAN	3/4	
74	2720	Plumbing	S.F.	6.40	9.05	12.05	5.70%	7.15%	9.35%	74
	2730	Heating, ventilating, air conditioning		9.60	15.25	21.50	8.15%	10.80%	14.90%	
	2900	Electrical		10.50	14	17.85	8.45%	10.05%	11.85%	
	3100	Total: Mechanical & Electrical	↓	38	46.50	59	25%	27.50%	30%	
	9000	Per pupil, total cost	Ea.	12,800	19,000	42,500				
	9500	Total: Mechanical & Electrical	"	3,600	4,550	11,500				
76	0010	SCHOOLS Junior High & Middle	S.F.	115	142	173				76
	0020	Total project costs	C.F.	7.30	9.40	10.55				
	0500	Masonry	S.F.	12.30	18.40	22.50	7.55%	11.10%	14.30%	
	1800	Equipment		3.14	5.90	8.65	1.80%	3.03%	4.80%	
	2720	Plumbing		6.70	8.25	10.20	5.30%	6.80%	7.25%	
	2770	Heating, ventilating, air conditioning		13.35	16.20	28.50	8.90%	11.55%	14.20%	
	2900	Electrical		11.70	14.45	18.25	8.05%	9.55%	10.60%	
	3100	Total: Mechanical & Electrical	↓	36.50	47	58.50	23%	25.50%	29.50%	
	9000	Per pupil, total cost	Ea.	14,500	19,100	25,600				
78	0010	SCHOOLS Senior High	S.F.	120	147	184				78
	0020	Total project costs	C.F.	7.20	10.10	17.05				
	1800	Equipment	S.F.	3.17	7.40	10.25	1.88%	2.67%	4.30%	
	2720	Plumbing		6.70	10.05	18.35	5.60%	6.90%	8.30%	
	2770	Heating, ventilating, air conditioning		11.50	15.65	24	8.95%	11.60%	15%	
	2900	Electrical		12.05	16.05	23.50	8.70%	10.35%	12.50%	
	3100	Total: Mechanical & Electrical	↓	39.50	47	76	24%	26.50%	28.50%	
	9000	Per pupil, total cost	Ea.	11,200	22,900	28,600				
80	0010	SCHOOLS Vocational	S.F.	96.50	140	173				80
	0020	Total project costs	C.F.	6	8.60	11.90				
	0500	Masonry	S.F.	4.24	14	21.50	3.20%	4.61%	10.95%	
	1800	Equipment		3.02	7.50	10.35	1.24%	3.10%	4.26%	
	2720	Plumbing		6.15	9.20	13.55	5.40%	6.90%	8.55%	
	2770	Heating, ventilating, air conditioning		8.65	16.05	27	8.60%	11.90%	14.65%	
	2900	Electrical		10.05	13.75	18.80	8.45%	11%	13.20%	
	3100	Total: Mechanical & Electrical	↓	38	66.50	85	27.50%	29.50%	31%	
	9000	Per pupil, total cost	Ea.	13,400	36,000	53,500				
83	0010	SPORTS ARENAS	S.F.	84.50	113	174				83
	0020	Total project costs	C.F.	4.58	8.20	10.60				
	2720	Plumbing	S.F.	4.22	7.40	15.65	4.35%	6.35%	9.40%	
	2770	Heating, ventilating, air conditioning		10.55	12.45	17.30	8.80%	10.20%	13.55%	
	2900	Electrical	↓	7.80	11.90	15.40	7.65%	9.75%	11.90%	
85	0010	SUPERMARKETS	S.F.	78	90	106				85
	0020	Total project costs	C.F.	4.34	5.25	7.95				
	2720	Plumbing	S.F.	4.35	5.50	6.40	5.40%	6%	7.45%	
	2770	Heating, ventilating, air conditioning		6.40	8.50	10.35	8.60%	8.65%	9.60%	
	2900	Electrical		9.15	11.15	13.25	10.40%	12.45%	13.60%	
	3100	Total: Mechanical & Electrical	↓	25	26.50	35.50	23.50%	27.50%	28.50%	
86	0010	SWIMMING POOLS	S.F.	126	295	450				86
	0020	Total project costs	C.F.	10.10	12.60	13.75				
	2720	Plumbing	S.F.	11.65	13.35	17.90	4.80%	9.70%	20.50%	
	2900	Electrical		9.60	15.35	34	6.05%	6.95%	7.60%	
	3100	Total: Mechanical & Electrical	↓	60	79	104	11.15%	14.10%	23.50%	
87	0010	TELEPHONE EXCHANGES	S.F.	157	238	310				87
	0020	Total project costs	C.F.	10.40	16.75	23				
	2720	Plumbing	S.F.	7.05	10.90	16	4.52%	5.80%	6.90%	
	2770	Heating, ventilating, air conditioning		16.40	33	41	11.80%	16.05%	18.40%	
	2900	Electrical		17.05	27	48	10.90%	14%	17.85%	
	3100	Total: Mechanical & Electrical	↓	50.50	95.50	135	29.50%	33.50%	44.50%	
91	0010	THEATERS	S.F.	99.50	135	199				91
	0020	Total project costs	C.F.	4.87	7.20	10.55				

50 17 | Square Foot Costs

	50 17 00 S.F. Costs		UNIT	UNIT COSTS			% OF TOTAL			
				1/4	MEDIAN	3/4	1/4	MEDIAN	3/4	
91	2720	Plumbing	S.F.	3.28	3.80	15.55	2.92%	4.70%	6.80%	91
	2770	Heating, ventilating, air conditioning	↓	10.25	12.40	15.35	8%	12.25%	13.40%	
	2900	Electrical	↓	9.20	12.45	25.50	8.05%	9.35%	12.25%	
	3100	Total: Mechanical & Electrical	↓	23.50	32	37.50	21.50%	25.50%	27.50%	
94	0010	TOWN HALLS City Halls & Municipal Buildings	S.F.	110	149	195				94
	0020	Total project costs	C.F.	7.95	12.40	18.10				
	2720	Plumbing	S.F.	4.91	9.20	16.10	4.31%	5.95%	7.95%	
	2770	Heating, ventilating, air conditioning	↓	8.85	17.60	26	7.05%	9.05%	13.45%	
	2900	Electrical	↓	11.15	15.40	21	8.05%	9.45%	11.65%	
	3100	Total: Mechanical & Electrical	↓	38.50	49	75	22%	26.50%	31%	
97	0010	WAREHOUSES & Storage Buildings	S.F.	44	63	93				97
	0020	Total project costs	C.F.	2.30	3.60	5.95				
	0100	Site work	S.F.	4.53	9	13.55	6.05%	12.95%	19.55%	
	0500	Masonry	↓	2.49	6.25	13.45	3.60%	7.35%	12%	
	1800	Equipment		.67	1.52	8.55	.72%	1.69%	5.55%	
	2720	Plumbing		1.46	2.62	4.91	2.90%	4.80%	6.55%	
	2730	Heating, ventilating, air conditioning		1.67	4.71	6.30	2.41%	5%	8.90%	
	2900	Electrical		2.60	4.89	8	5.15%	7.20%	10.05%	
	3100	Total: Mechanical & Electrical	↓	7.25	11.10	22	13.30%	18.90%	26%	
99	0010	WAREHOUSE & OFFICES Combination	S.F.	54	72	99				99
	0020	Total project costs	C.F.	2.76	4.01	5.90				
	1800	Equipment	S.F.	.93	1.81	2.69	.42%	1.19%	2.40%	
	2720	Plumbing	↓	2.08	3.63	5.40	3.74%	4.76%	6.30%	
	2770	Heating, ventilating, air conditioning		3.29	5.15	7.20	5%	5.65%	10.05%	
	2900	Electrical		3.68	5.45	8.50	5.85%	8%	10%	
	3100	Total: Mechanical & Electrical	↓	10.25	15.55	24.50	14.55%	19.95%	24.50%	

Square Foot Project Size Modifier

One factor that affects the S.F. cost of a particular building is the size. In general, for buildings built to the same specifications in the same locality, the larger building will have the lower S.F. cost. This is due mainly to the decreasing contribution of the exterior walls, plus the economy of scale usually achievable in larger buildings. The area conversion scale shown below will give a factor to convert costs for the typical size building to an adjusted cost for the particular project.

Example: Determine the cost per S.F. for a 100,000 S.F. Mid-rise apartment building.

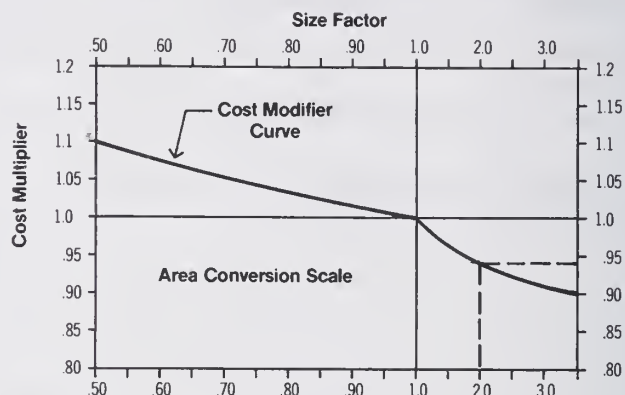
$$\frac{\text{Proposed building area} = 100,000 \text{ S.F.}}{\text{Typical size from below} = 50,000 \text{ S.F.}} = 2.00$$

Enter area conversion scale at 2.0, intersect curve, read horizontally the appropriate cost multiplier of .94. Size adjusted cost becomes $.94 \times \$117.00 = \110.00 based on national average costs.

Note: For size factors less than .50, the cost multiplier is 1.1
For size factors greater than 3.5, the cost multiplier is .90

The square foot base size table lists the median costs, most typical project size in our accumulated data, and the range in size of the projects.

The size factor for your project is determined by dividing your project area in S.F. by the typical project size for the particular building type. With this factor, enter the area conversion scale at the appropriate size factor and determine the appropriate cost multiplier for your building size.



Square Foot Base Size							
Building Type	Median Cost per S.F.	Typical Size Gross S.F.	Typical Range Gross S.F.	Building Type	Median Cost per S.F.	Typical Size Gross S.F.	Typical Range Gross S.F.
Apartments, Low Rise	\$ 92.50	21,000	9,700 - 37,200	Jails	\$ 280.00	40,000	5,500 - 145,000
Apartments, Mid Rise	117.00	50,000	32,000 - 100,000	Libraries	186.00	12,000	7,000 - 31,000
Apartments, High Rise	127.00	145,000	95,000 - 600,000	Living, Assisted	151.00	32,300	23,500 - 50,300
Auditoriums	158.00	25,000	7,600 - 39,000	Medical Clinics	159.00	7,200	4,200 - 15,700
Auto Sales	115.00	20,000	10,800 - 28,600	Medical Offices	151.00	6,000	4,000 - 15,000
Banks	207.00	4,200	2,500 - 7,500	Motels	111.00	40,000	15,800 - 120,000
Churches	143.00	17,000	2,000 - 42,000	Nursing Homes	155.00	23,000	15,000 - 37,000
Clubs, Country	144.00	6,500	4,500 - 15,000	Offices, Low Rise	132.00	20,000	5,000 - 80,000
Clubs, Social	138.00	10,000	6,000 - 13,500	Offices, Mid Rise	130.00	120,000	20,000 - 300,000
Clubs, YMCA	164.00	28,300	12,800 - 39,400	Offices, High Rise	166.00	260,000	120,000 - 800,000
Colleges (Class)	164.00	50,000	15,000 - 150,000	Police Stations	208.00	10,500	4,000 - 19,000
Colleges (Science Lab)	264.00	45,600	16,600 - 80,000	Post Offices	154.00	12,400	6,800 - 30,000
College (Student Union)	195.00	33,400	16,000 - 85,000	Power Plants	1150.00	7,500	1,000 - 20,000
Community Center	147.00	9,400	5,300 - 16,700	Religious Education	131.00	9,000	6,000 - 12,000
Court Houses	202.00	32,400	17,800 - 106,000	Research	217.00	19,000	6,300 - 45,000
Dept. Stores	85.50	90,000	44,000 - 122,000	Restaurants	188.00	4,400	2,800 - 6,000
Dormitories, Low Rise	166.00	25,000	10,000 - 95,000	Retail Stores	91.50	7,200	4,000 - 17,600
Dormitories, Mid Rise	192.00	85,000	20,000 - 200,000	Schools, Elementary	138.00	41,000	24,500 - 55,000
Factories	83.00	26,400	12,900 - 50,000	Schools, Jr. High	142.00	92,000	52,000 - 119,000
Fire Stations	153.00	5,800	4,000 - 8,700	Schools, Sr. High	147.00	101,000	50,500 - 175,000
Fraternity Houses	142.00	12,500	8,200 - 14,800	Schools, Vocational	140.00	37,000	20,500 - 82,000
Funeral Homes	159.00	10,000	4,000 - 20,000	Sports Arenas	113.00	15,000	5,000 - 40,000
Garages, Commercial	102.00	9,300	5,000 - 13,600	Supermarkets	90.00	44,000	12,000 - 60,000
Garages, Municipal	129.00	8,300	4,500 - 12,600	Swimming Pools	295.00	20,000	10,000 - 32,000
Garages, Parking	55.00	163,000	76,400 - 225,300	Telephone Exchange	238.00	4,500	1,200 - 10,600
Gymnasiums	140.00	19,200	11,600 - 41,000	Theaters	135.00	10,500	8,800 - 17,500
Hospitals	253.00	55,000	27,200 - 125,000	Town Halls	149.00	10,800	4,800 - 23,400
House (Elderly)	126.00	37,000	21,000 - 66,000	Warehouses	63.00	25,000	8,000 - 72,000
Housing (Public)	116.00	36,000	14,400 - 74,400	Warehouse & Office	72.00	25,000	8,000 - 72,000
Ice Rinks	167.00	29,000	27,200 - 33,600				

Abbreviations

A	Area Square Feet; Ampere	Brk., brk	Brick	Csc	Cosecant
AAFES	Army and Air Force Exchange Service	brkt	Bracket	C.S.F.	Hundred Square Feet
ABS	Acrylonitrile Butadiene Styrene; Asbestos Bonded Steel	Brng.	Bearing	CSI	Construction Specifications Institute
A.C., AC	Alternating Current; Air-Conditioning; Asbestos Cement; Plywood Grade A & C	Brs.	Brass	CT	Current Transformer
ACI	American Concrete Institute	Brz.	Bronze	CTS	Copper Tube Size
ACR	Air Conditioning Refrigeration	Bsn.	Basin	Cu	Copper, Cubic
ADA	Americans with Disabilities Act	Btr.	Better	Cu. Ft.	Cubic Foot
AD	Plywood, Grade A & D	Btu	British Thermal Unit	cw	Continuous Wave
Addit.	Additional	BTUH	BTU per Hour	C.W.	Cool White; Cold Water
Adj.	Adjustable	Bu.	bushels	Cwt.	100 Pounds
af	Audio-frequency	BUR	Built-up Roofing	C.W.X.	Cool White Deluxe
AFUE	Annual Fuel Utilization Efficiency	BX	Interlocked Armored Cable	C.Y.	Cubic Yard (27 cubic feet)
AGA	American Gas Association	°C	degree centigrade	C.Y./Hr.	Cubic Yard per Hour
Agg.	Aggregate	c	Conductivity, Copper Sweat	Cyl.	Cylinder
A.H., Ah	Ampere Hours	C	Hundred; Centigrade	d	Penny (nail size)
A hr.	Ampere-hour	C/C	Center to Center, Cedar on Cedar	D	Deep; Depth; Discharge
A.H.U., AHU	Air Handling Unit	C-C	Center to Center	Dis., Disch.	Discharge
A.I.A.	American Institute of Architects	Cab	Cabinet	Db	Decibel
AIC	Ampere Interrupting Capacity	Cair.	Air Tool Laborer	Dbl.	Double
Allow.	Allowance	Cal.	caliper	DC	Direct Current
alt., alt	Alternate	Calc	Calculated	DDC	Direct Digital Control
Alum.	Aluminum	Cap.	Capacity	Demob.	Demobilization
a.m.	Ante Meridiem	Carp.	Carpenter	d.f.t.	Dry Film Thickness
Amp.	Ampere	C.B.	Circuit Breaker	d.f.u.	Drainage Fixture Units
Anod.	Anodized	C.C.A.	Chromate Copper Arsenate	D.H.	Double Hung
ANSI	American National Standards Institute	C.C.F.	Hundred Cubic Feet	DHW	Domestic Hot Water
APA	American Plywood Association	cd	Candela	DI	Ductile Iron
Approx.	Approximate	cd/sf	Candela per Square Foot	Diag.	Diagonal
Apt.	Apartment	CD	Grade of Plywood Face & Back	Diam., Dia	Diameter
Asb.	Asbestos	CDX	Plywood, Grade C & D, exterior glue	Distrib.	Distribution
A.S.B.C.	American Standard Building Code	Cefi.	Cement Finisher	Div.	Division
Asbe.	Asbestos Worker	Cem.	Cement	Dk.	Deck
ASCE.	American Society of Civil Engineers	CF	Hundred Feet	D.L.	Dead Load; Diesel
A.S.H.R.A.E.	American Society of Heating, Refrig. & AC Engineers	C.F.	Cubic Feet	DLH	Deep Long Span Bar Joist
ASME	American Society of Mechanical Engineers	CFM	Cubic Feet per Minute	dlx	Deluxe
ASTM	American Society for Testing and Materials	CFRP	Carbon Fiber Reinforced Plastic	Do.	Ditto
Attchmt.	Attachment	c.g.	Center of Gravity	DOP	Diocetyl Phthalate Penetration Test (Air Filters)
Avg., Ave.	Average	CHW	Chilled Water;	Dp., dp	Depth
AWG	American Wire Gauge	C.I., CI	Cast Iron	D.P.S.T.	Double Pole, Single Throw
AWWA	American Water Works Assoc.	C.I.P., CIP	Cast in Place	Dr.	Drive
Bbl.	Barrel	Circ.	Circuit	DR	Dimension Ratio
B&B, BB	Grade B and Better; Balled & Burlapped	C.L.	Carload Lot	Drink.	Drinking
B&S	Bell and Spigot	CL	Chain Link	D.S.	Double Strength
B.&W.	Black and White	Clab.	Common Laborer	D.S.A.	Double Strength A Grade
b.c.c.	Body-centered Cubic	Clam	Common maintenance laborer	D.S.B.	Double Strength B Grade
B.C.Y.	Bank Cubic Yards	C.L.F.	Hundred Linear Feet	Dty.	Duty
BE	Bevel End	CLF	Current Limiting Fuse	DWV	Drain Waste Vent
B.F.	Board Feet	CLP	Cross Linked Polyethylene	DX	Deluxe White, Direct Expansion
Bg. cem.	Bag of Cement	cm	Centimeter	dyn	Dyne
BHP	Boiler Horsepower; Brake Horsepower	CMP	Corr. Metal Pipe	e	Eccentricity
B.I.	Black Iron	CMU	Concrete Masonry Unit	E	Equipment Only; East: emissivity
bidir.	bidirectional	CN	Change Notice	Ea.	Each
Bit., Bitum.	Bituminous	Col.	Column	EB	Encased Burial
Bit., Conc.	Bituminous Concrete	CO ₂	Carbon Dioxide	Econ.	Economy
Bk.	Backed	Comb.	Combination	E.C.Y.	Embankment Cubic Yards
Bkrs.	Breakers	comm.	Commercial, Communication	EDP	Electronic Data Processing
Bldg., bldg	Building	Compr.	Compressor	EIFS	Exterior Insulation Finish System
Blk.	Block	Conc.	Concrete	E.D.R.	Equiv. Direct Radiation
Bm.	Beam	Cont., cont	Continuous; Continued, Container	Eq.	Equation
Boil.	Boilermaker	Corr.	Corrugated	EL	elevation
bpm	Blows per Minute	Cos	Cosine	Elec.	Electrician; Electrical
BR	Bedroom	Cot	Cotangent	Elev.	Elevator; Elevating
Brg.	Bearing	Cov.	Cover	EMT	Electrical Metallic Conduit; Thin Wall Conduit
Brhe.	Bricklayer Helper	C/P	Cedar on Paneling	Eng.	Engine, Engineered
Bric.	Bricklayer	CPA	Control Point Adjustment	EPDM	Ethylene Propylene Diene Monomer
		Cplg.	Coupling	EPS	Expanded Polystyrene
		CPM	Critical Path Method	Eqhv.	Equip. Oper., Heavy
		CPVC	Chlorinated Polyvinyl Chloride	Eqlt.	Equip. Oper., Light
		C.Pr.	Hundred Pair	Eqmd.	Equip. Oper., Medium
		CRC	Cold Rolled Channel	Eqmm.	Equip. Oper., Master Mechanic
		Creos.	Creosote	Eql.	Equip. Oper., Oilers
		Crpt.	Carpet & Linoleum Layer	Equip.	Equipment
		CRT	Cathode-ray Tube	ERW	Electric Resistance Welded
		CS	Carbon Steel, Constant Shear Bar Joist		

Abbreviations

E.S.	Energy Saver	H	High Henry	Lath.	Lather
Est.	Estimated	HC	High Capacity	Lav.	Lavatory
esu	Electrostatic Units	H.D., HD	Heavy Duty; High Density	lb., #	Pound
E.W.	Each Way	H.D.O.	High Density Overlaid	L.B., LB	Load Bearing; L Conduit Body
EWT	Entering Water Temperature	HDPE	High density polyethylene plastic	L. & E.	Labor & Equipment
Excav.	Excavation	Hdr.	Header	lb./hr.	Pounds per Hour
excl.	Excluding	Hdwe.	Hardware	lb./L.F.	Pounds per Linear Foot
Exp., exp	Expansion, Exposure	H.I.D., HID	High Intensity Discharge	lb/sq.in.	Pound-force per Square Inch
Ext., ext	Exterior; Extension	Help.	Helper Average	L.C.L.	Less than Carload Lot
Extru.	Extrusion	HEPA	High Efficiency Particulate Air	L.C.Y.	Loose Cubic Yard
f.	Fiber stress		Filter	Ld.	Load
F	Fahrenheit; Female; Fill	Hg	Mercury	LE	Lead Equivalent
Fab., fab	Fabricated; fabric	HIC	High Interrupting Capacity	LED	Light Emitting Diode
FBCGS	Fiberglass	HM	Hollow Metal	L.F.	Linear Foot
FC.	Footcandles	HMWPE	high molecular weight polyethylene	L.F. Nose	Linear Foot of Stair Nosing
f.c.c.	Face-centered Cubic	HO	High Output	L.F. Rsr	Linear Foot of Stair Riser
f'c.	Compressive Stress in Concrete; Extreme Compressive Stress	Horiz.	Horizontal	Ig.	Long; Length; Large
EE.	Front End	H.P., HP	Horsepower; High Pressure	L & H	Light and Heat
FEP	Fluorinated Ethylene Propylene (Teflon)	H.P.E.	High Power Factor	LH	Long Span Bar Joist
		Hr.	Hour	L.H.	Labor Hours
EG.	Flat Grain	Hrs./Day	Hours per Day	L.L., LL	Live Load
E.H.A.	Federal Housing Administration	HSC	High Short Circuit	L.L.D.	Lamp Lumen Depreciation
Fig.	Figure	Ht.	Height	lm	Lumen
Fin.	Finished	Htg.	Heating	lm/sf	Lumen per Square Foot
FIPS	Female Iron Pipe Size	Htrs.	Heaters	lm/W	Lumen per Watt
Fixt.	Fixture	HVAC	Heating, Ventilation & Air-Conditioning	LOA	Length Over All
FJP	Finger jointed and primed	Hvy.	Heavy	log	Logarithm
Fl. Oz.	Fluid Ounces	HW	Hot Water	L-O-L	Lateralole
Flr.	Floor	Hyd.; Hydr.	Hydraulic	long.	longitude
FM	Frequency Modulation; Factory Mutual	Hz	Hertz (cycles)	L.P., LP	Liquefied Petroleum; Low Pressure
		I.	Moment of Inertia	L.P.F.	Low Power Factor
Fmg.	Framing	IBC	International Building Code	LR	Long Radius
FM/U.L.	Factory Mutual/Underwriters Labs	I.C.	Interrupting Capacity	L.S.	Lump Sum
Fdn.	Foundation	ID	Inside Diameter	Lt.	Light
FNPT	Female National Pipe Thread	I.D.	Inside Dimension; Identification	Lt. Ga.	Light Gauge
Fori.	Foreman, Inside	I.E.	Inside Frosted	L.T.L.	Less than Truckload Lot
Foro.	Foreman, Outside	I.M.C.	Intermediate Metal Conduit	Lt. Wt.	Lightweight
Fount.	Fountain	In.	Inch	L.V.	Low Voltage
fpm	Feet per Minute	Incan.	Incandescent	M	Thousand; Material; Male; Light Wall Copper Tubing
FPT	Female Pipe Thread	Incl.	Included; Including	M ² CA	Meters Squared Contact Area
Fr	Frame	Int.	Interior	m/hr.; M.H.	Man-hour
ER.	Fire Rating	Inst.	Installation	mA	Milliampere
FRK	Foil Reinforced Kraft	Insul., insul	Insulation/Insulated	Mach.	Machine
FSK	Foil/scrim/kraft	I.P.	Iron Pipe	Mag. Str.	Magnetic Starter
FRP	Fiberglass Reinforced Plastic	I.P.S., IPS	Iron Pipe Size	Maint.	Maintenance
FS	Forged Steel	IPT	Iron Pipe Threaded	Marb.	Marble Setter
FSC	Cast Body; Cast Switch Box	I.W.	Indirect Waste	Mat; Mat'l.	Material
Ft., ft	Foot; Feet	J	Joule	Max.	Maximum
Ftng.	Fitting	J.I.C.	Joint Industrial Council	MBF	Thousand Board Feet
Ftg.	Footing	K	Thousand; Thousand Pounds; Heavy Wall Copper Tubing, Kelvin	MBH	Thousand BTU's per hr.
Ft lb.	Foot Pound	K.A.H.	Thousand Amp. Hours	MC	Metal Clad Cable
Furn.	Furniture	kcmil	Thousand Circular Mils	MCC	Motor Control Center
FVNR	Full Voltage Non-Reversing	KD	Knock Down	M.C.F.	Thousand Cubic Feet
FVR	Full Voltage Reversing	K.D.A.T.	Kiln Dried After Treatment	MCFM	Thousand Cubic Feet per Minute
FXM	Female by Male	kg	Kilogram	M.C.M.	Thousand Circular Mils
Fy.	Minimum Yield Stress of Steel	kG	Kilogauss	MCP	Motor Circuit Protector
g	Gram	kgf	Kilogram Force	MD	Medium Duty
G	Gauss	kHz	Kilohertz	MDF	Medium-density fibreboard
Ga.	Gauge	Kip	1000 Pounds	M.D.O.	Medium Density Overlaid
Gal., gal.	Gallon	KJ	Kiljoule	Med.	Medium
gpm, GPM	Gallon per Minute	K.L.	Effective Length Factor	MF	Thousand Feet
Galv., galv	Galvanized	K.L.F.	Kips per Linear Foot	M.E.B.M.	Thousand Feet Board Measure
GC/MS	Gas Chromatograph/Mass Spectrometer	Km	Kilometer	Mfg.	Manufacturing
		KO	Knock Out	Mfrs.	Manufacturers
Gen.	General	K.S.F.	Kips per Square Foot	mg	Milligram
GH	Ground Fault Interrupter	K.S.I.	Kips per Square Inch	MGD	Million Gallons per Day
GFRG	Glass Fiber Reinforced Concrete	kV	Kilovolt	MGPH	Thousand Gallons per Hour
Glaz.	Glazier	kVA	Kilovolt Ampere	MH, M.H.	Manhole; Metal Halide; Man-Hour
GPD	Gallons per Day	kVAR	Kilovar (Reactance)	MHz	Megahertz
gpf	Gallon per flush	KW	Kilowatt	Mi.	Mile
GPH	Gallons per Hour	KWh	Kilowatt-hour	MI	Malleable Iron; Mineral Insulated
GPM	Gallons per Minute	L	Labor Only; Length; Long; Medium Wall Copper Tubing	MIPS	Male Iron Pipe Size
GR	Grade	Lab.	Labor	mj	Mechanical Joint
Grin	Granular	lat	Latitude	m	Meter
Grnd.	Ground			mm	Millimeter
GVW	Gross Vehicle Weight			Mill.	Millwright
GWB	Gypsum wall board			Min., min.	Minimum, minute

Abbreviations

Misc.	Miscellaneous	PDCA	Painting and Decorating	SC	Screw Cover
ml	Milliliter, Mainline		Contractors of America	SCFM	Standard Cubic Feet per Minute
M.L.F.	Thousand Linear Feet	PE., PE	Professional Engineer;	Scaf.	Scaffold
Mo.	Month		Porcelain Enamel;	Sch., Sched.	Schedule
Mobil.	Mobilization		Polyethylene; Plain End	S.C.R.	Modular Brick
Mog.	Mogul Base	P.E.C.I.	Porcelain Enamel on Cast Iron	S.D.	Sound Deadening
MPH	Miles per Hour	Perf.	Perforated	SDR	Standard Dimension Ratio
MPT	Male Pipe Thread	PEX	Cross linked polyethylene	S.E.	Surfaced Edge
MRGWB	Moisture Resistant Gypsum	Ph.	Phase	Sel.	Select
	Wallboard	PI.	Pressure Injected	SER, SEU	Service Entrance Cable
MRT	Mile Round Trip	Pile.	Pile Driver	S.E	Square Foot
ms	Millisecond	Pkg.	Package	S.E.C.A.	Square Foot Contact Area
M.S.F.	Thousand Square Feet	Pl.	Plate	S.F. Flr.	Square Foot of Floor
Mstz.	Mosaic & Terrazzo Worker	Plah.	Plasterer Helper	S.E.G.	Square Foot of Ground
M.S.Y.	Thousand Square Yards	Plas.	Plasterer	S.E. Hor.	Square Foot Horizontal
Mtd., mtd., mtd	Mounted	plf	Pounds Per Linear Foot	SFR	Square Feet of Radiation
Mthe.	Mosaic & Terrazzo Helper	Pluh.	Plumbers Helper	S.E. Shlf.	Square Foot of Shelf
Mtng.	Mounting	Plum.	Plumber	S4S	Surface 4 Sides
Multi.	Multi; Multiply	Ply.	Plywood	Shee.	Sheet Metal Worker
M.V.A.	Million Volt Amperes	p.m.	Post Meridiem	Sin.	Sine
M.V.A.R.	Million Volt Amperes Reactance	Pntd.	Painted	Skwk.	Skilled Worker
MV	Megavolt	Pord.	Painter, Ordinary	SL	Saran Lined
MW	Megawatt	pp	Pages	S.L.	Slimline
MXM	Male by Male	PP, PPL	Polypropylene	Sldr.	Solder
MYD	Thousand Yards	P.P.M.	Parts per Million	SLH	Super Long Span Bar Joist
N	Natural; North	Pr.	Pair	S.N.	Solid Neutral
nA	Nanoampere	P.E.S.B.	Pre-engineered Steel Building	SO	Stranded with oil resistant inside insulation
NA	Not Available; Not Applicable	Prefab.	Prefabricated	S-O-L	Socketolet
N.B.C.	National Building Code	Prefin.	Prefinished	sp	Standpipe
NC	Normally Closed	Prop.	Propelled	S.P.	Static Pressure; Single Pole; Self-Propelled
NEMA	National Electrical Manufacturers Assoc.	PSE, psf	Pounds per Square Foot	Spri.	Sprinkler Installer
NEHB	Bolted Circuit Breaker to 600V.	PSI, psi	Pounds per Square Inch	spwg	Static Pressure Water Gauge
NFPA	National Fire Protection Association	PSIG	Pounds per Square Inch Gauge	S.P.D.T.	Single Pole, Double Throw
NLB	Non-Load-Bearing	PSP	Plastic Sewer Pipe	SPF	Spruce Pine Fir; Sprayed Polyurethane Foam
NM	Non-Metallic Cable	Pspr.	Painter, Spray	S.P.S.T.	Single Pole, Single Throw
nm	Nanometer	Psst.	Painter, Structural Steel	SPT	Standard Pipe Thread
No.	Number	P.T.	Potential Transformer	Sq.	Square; 100 Square Feet
NO	Normally Open	P. & T.	Pressure & Temperature	Sq. Hd.	Square Head
N.O.C.	Not Otherwise Classified	Ptd.	Painted	Sq. In.	Square Inch
Nose.	Nosing	Ptns.	Partitions	S.S.	Single Strength; Stainless Steel
NPT	National Pipe Thread	Pu	Ultimate Load	S.S.B.	Single Strength B Grade
NQOD	Combination Plug-on/Bolt on Circuit Breaker to 240V.	PVC	Polyvinyl Chloride	sst, ss	Stainless Steel
		Pvmt.	Pavement	Sswk.	Structural Steel Worker
N.R.C., NRC	Noise Reduction Coefficient/ Nuclear Regulator Commission	PRV	Pressure Relief Valve	Sswl.	Structural Steel Welder
		Pwr.	Power	St., Std.	Steel
N.R.S.	Non Rising Stem	Q	Quantity Heat Flow	STC	Sound Transmission Coefficient
ns	Nanosecond	Qt.	Quart	Std.	Standard
nW	Nanowatt	Quan., Qty.	Quantity	Stg.	Staging
OB	Opposing Blade	Q.C.	Quick Coupling	STK	Select Tight Knot
OC	On Center	r	Radius of Gyration	STP	Standard Temperature & Pressure
OD	Outside Diameter	R	Resistance	Stpi.	Steamfitter, Pipefitter
O.D.	Outside Dimension	R.C.P.	Reinforced Concrete Pipe	Str.	Strength; Starter; Straight
ODS	Overhead Distribution System	Rect.	Rectangle	Strd.	Stranded
O.G.	Ogee	recpt.	receptacle	Struct.	Structural
O.H.	Overhead	Reg.	Regular	Sty.	Story
O&P	Overhead and Profit	Reinf.	Reinforced	Subj.	Subject
Oper.	Operator	Req'd.	Required	Subs.	Subcontractors
Opng.	Opening	Res.	Resistant	Surf.	Surface
Orna.	Ornamental	Resi.	Residential	Sw.	Switch
OSB	Oriented Strand Board	RF	Radio Frequency	Swbd.	Switchboard
OS&Y	Outside Screw and Yoke	RFID	Radio-frequency identification	S.Y.	Square Yard
OSHA	Occupational Safety and Health Act	Rgh.	Rough	Syn.	Synthetic
		RGS	Rigid Galvanized Steel	S.Y.P.	Southern Yellow Pine
Ovhd.	Overhead	RHW	Rubber, Heat & Water Resistant;	Sys.	System
OWG	Oil, Water or Gas		Residential Hot Water	t.	Thickness
Oz.	Ounce	rms	Root Mean Square	T	Temperature; Ton
P.	Pole; Applied Load; Projection	Rnd.	Round	Tan	Tangent
p.	Page	Rodm.	Rodman	T.C.	Terra Cotta
Pape.	Paperhanger	Rofc.	Roofer, Composition	T & C	Threaded and Coupled
P.A.PR.	Powered Air Purifying Respirator	Rofp.	Roofer, Precast	T.D.	Temperature Difference
PAR	Parabolic Reflector	Rohe.	Roofer Helpers (Composition)	Tdd	Telecommunications Device for the Deaf
P.B., PB	Push Button	Rots.	Roofer, Tile & Slate		
Pc., Pcs.	Piece, Pieces	R.O.W.	Right of Way	T.E.M.	Transmission Electron Microscopy
P.C.	Portland Cement; Power Connector	RPM	Revolutions per Minute	temp	Temperature, Tempered, Temporary
P.C.F.	Pounds per Cubic Foot	R.S.	Rapid Start	TFEN	Nylon Jacketed Wire
PCM	Phase Contrast Microscopy	Rsr	Riser		
		RT	Round Trip		
		S.	Suction; Single Entrance; South		
		SBS	Styrene Butadiene Styrene		

Abbreviations

TFE	Tetrafluoroethylene (Teflon)	U.L., UL	Underwriters Laboratory	w/	With
T. & G.	Tongue & Groove;	Uld.	unloading	W.C., WC	Water Column; Water Closet
	Tar & Gravel	Unfin.	Unfinished	W.E	Wide Flange
Th, Thk.	Thick	UPS	Uninterruptible Power Supply	W.G.	Water Gauge
Thn.	Thin	URD	Underground Residential	Wldg.	Welding
Thrded	Threaded		Distribution	W. Mile	Wire Mile
Tilf.	Tile Layer, Floor	US	United States	W-O-L	Weldolet
Tilh.	Tile Layer, Helper	USGBC	U.S. Green Building Council	W.R.	Water Resistant
THHN	Nylon Jacketed Wire	USP	United States Primed	Wrck.	Wrecker
THW	Insulated Strand Wire	UTMCD	Uniform Traffic Manual For Control	W.S.P.	Water, Steam, Petroleum
THWN	Nylon Jacketed Wire		Devices	WT., Wt.	Weight
TL., TL	Truckload	UTP	Unshielded Twisted Pair	WWF	Welded Wire Fabric
T.M.	Track Mounted	V	Volt	XFER	Transfer
Tot.	Total	VA	Volt Amperes	XFMR	Transformer
TO-L	Threadolet	V.C.T.	Vinyl Composition Tile	XHD	Extra Heavy Duty
tmpd	Tempered	VAV	Variable Air Volume	XHHW,	Cross-Linked Polyethylene Wire
TPO	Thermoplastic Polyolefin	VC	Veneer Core	XLPE	Insulation
T.S.	Trigger Start	VDC	Volts Direct Current	XLP	Cross-linked Polyethylene
Tr.	Trade	Vent.	Ventilation	Xport	Transport
Transf.	Transformer	Vert.	Vertical	Y	Wye
Trlv.	Truck Driver, Heavy	V.F	Vinyl Faced	yd	Yard
Trlr	Trailer	V.G.	Vertical Grain	yr	Year
Trlt.	Truck Driver, Light	VHF	Very High Frequency	Δ	Delta
TTY	Teletypewriter	VHO	Very High Output	%	Percent
TV	Television	Vib.	Vibrating	~	Approximately
T.W.	Thermoplastic Water Resistant	VLF	Vertical Linear Foot	Ø	Phase; diameter
	Wire	VOC	Volatile Organic Compound	@	At
UCI	Uniform Construction Index	Vol.	Volume	#	Pound; Number
UF	Underground Feeder	VRP	Vinyl Reinforced Polyester	<	Less Than
UGND	Underground Feeder	W	Wire; Watt; Wide; West	>	Greater Than
UHF	Ultra High Frequency			Z	zone
U.I.	United Inch				

A

- Abandon catch basin 29
- Abatement asbestos 41
 - equipment asbestos 40
- ABC extinguisher portable 382
- extinguisher wheeled 383
- Abvgrnd storage tank concrete .. 518
- Abrasive aluminum oxide 50
 - floor 80
 - floor tile 330
 - silicon carbide 50, 80
 - terrazzo 339
 - tile 329
 - tread 330
- ABS DWV pipe 489
- Absorber shock 493
- Absorption testing 15
 - water chiller 538
- A/C packaged terminal 542
- Accelerator sprinkler system 474
- Access card key 305
 - control card type 305
 - control fingerprint scanner ... 306
 - control video camera 591
 - door and panel 274
 - door basement 84
 - door duct 523
 - door fire rated 274
 - door floor 274
 - door metal 274
 - door roof 253
 - door stainless steel 274
 - floor 344
 - flooring 344
 - road and parking area 22
- Accessory anchor bolt 64
 - bathroom 329, 378, 379
 - door 306
 - drainage 249
 - drywall 328
 - duct 523
 - fireplace 380
 - gypsum board 328
 - masonry 99
 - plaster 321
 - rebar 68
 - reinforcing 68
 - roof 253
 - steel wire rope 136
 - toilet 378
- Accordion door 271
- Acid etch finish concrete 81
 - proof floor 335, 341
 - resistant pipe 510
- Acoustic ceiling board 331
 - ceiling tile suspended 331
- Acoustical barrier 347
 - batt 346
 - block 108
 - booth 456
 - ceiling 331, 332
 - door 279
 - enclosure 456, 457
 - folding door 376
 - folding partition 376
 - glass 311
 - metal deck 143
 - panel 376
 - partition 375, 376
 - room 446, 447
 - sealant 258, 326
 - treatment 346
 - underlayment 347
 - wall tile 332
 - window wall 283
- Acrylic ceiling 332
 - floor 341
 - plexiglass 310
 - rubber roofing 244
 - sign 368
 - wall coating 361
 - wallcovering 345
 - wood block 336
- Adhesive cement 338
 - EPDM 223
 - neoprene 223
 - PVC 223
 - removal floor 82
 - roof 240
 - wallpaper 345
- Adjustable astragal 305
 - jack post 128
- Adjustment factor 10
 - factor labor 478
- Admixture cement 81
 - concrete 50
- Adobe brick 111
- Aeration sewage 686
- Aerator 509
- Aerial lift 695
 - lift truck 700
 - photography 14
 - seeding 648
 - survey 28
- Agent form release 51
- Aggregate exposed 81, 630
 - lightweight 51
 - masonry 97
 - spreader 692, 699
 - stone 648
 - testing 15
- Aid staging 21
- Air balancing 513
 - barrier curtain 527
 - cleaner electronic 532
 - compressor 695
 - compressor control system ... 516
 - compressor dental 417
 - compressor portable 695
 - conditioner cooling & heating . 542
 - conditioner direct expansion .. 544
 - conditioner fan coil 543
 - conditioner gas heat 541
 - conditioner general 512
 - conditioner packaged term. ... 542
 - conditioner receptacle 563
 - conditioner removal 512
 - conditioner rooftop 541
 - conditioner self-contained 542
 - conditioner thru-wall 542
 - conditioner ventilating 522
 - conditioner wiring 566
 - conditioning 846
 - conditioning computer 542
 - conditioning fan 525
 - conditioning ventilating .. 515, 522, 523, 525, 526, 531, 539, 540, 542
 - control 518
 - cooled belt drive condenser .. 538
 - cooled condensing unit 538
 - cooled direct drive condenser . 538
 - curtain 527
 - entraining agent 50
 - filter 531, 532
 - filter mechanical media 531
 - filter permanent washable 531
 - filter roll type 531
 - filter washable 531
 - filtration 40
 - filtration charcoal type 532
 - handling fan 525
 - handling troffer 577
 - hose 696
 - lock 449
 - make-up unit 541
 - quality 402
 - register 529
 - return grille 529
 - sampling 40
 - separator 518
 - spade 696
 - supply pneumatic control 516
 - supply register 529
 - supported building 449
 - supported enclosure 451
 - supported storage tank cover . 448
 - supported structure demo 440
 - supported structures 840
 - tube system 469
 - unit make-up 541
 - vent automatic 518
 - vent convector or baseboard .. 545
 - vent roof 253
 - wall 377
- Air-compressor mobilization 595
- Aircraft bi-fold hangar door 278
 - cable 138
- Airfoil fan centrifugal 526
- Air-handling unit 540, 543
 - airless sprayer 40
- Airplane hangar 456
- Airport painted marking 637
- Air-source heat pump 542
- Alarm exit control 590
 - fire 591
 - panel and device 591
 - residential 565
 - sprinkler 591
 - standpipe 591
 - valve sprinkler 472
- All fuel chimney 532
- Alley bowling 413
- Alloy steel chain 162
- Altar 419
- Alteration fee 10
- Alternating tread ladder 155
- Alternative fastening 229
- Aluminum astragal 304
 - bench 437
 - blind 422
 - cable tray 559
 - ceiling tile 332
 - column 164, 212
 - column base 161, 164
 - column cap 164
 - column cover 161
 - commercial door 266
 - conduit 556
 - coping 117
 - cross 420
 - curtain wall glazed 285
 - diffuser perforated 528
 - directory board 367
 - dome 456
 - door 261, 280
 - door double acting swing 282
 - downspout 248
 - drip edge 252
 - ductwork 522
 - edging 650
 - entrance 284
 - expansion joint 251
 - extrusion 135
 - fence 639, 640
 - flagpole 388
 - flashing 236, 246, 495
 - foil 227, 230, 347
 - framing 135
 - grandstand 451
 - grating 156
 - gravel stop 248
 - grille 529
 - gutter 249
 - handrail 344
 - joist shoring 61
 - louver 311, 530
 - Mansard 236
 - mesh grating 157
 - nail 171
 - operating louver 530
 - oxide abrasive 50
 - pipe 661, 664
 - plank grating 157
 - plank scaffold 21
 - register 529
 - reglet 251
 - rivet 125
 - roof 234
 - roof panel 234
 - salvage 479
 - sash 286
 - screen storm door 261
 - screw 236
 - security driveway gate 279
 - service entrance cable 554
 - shape structural 135
 - sheet metal 248
 - shelter 456
 - shingle 231
 - siding 236
 - siding paint 351
 - siding panel 236
 - sign 368
 - steeple 388
 - storefront 284
 - storm door 261
 - structural 135
 - threshold 301
 - tile 233, 331
 - transom 284
 - trench cover 159
 - tube frame 282
 - weatherstrip 304
 - weld rod 127
 - window 286
 - window demolition 260
- Aluminum-framed door 284
- Ammeter 566
- Analysis petrographic 15
 - sieve 15
- Anchor bolt 64, 98
 - bolt accessory 64
 - bolt screw 69
 - bolt sleeve 64
 - brick 98
 - buck 98
 - bumper 395
 - chemical 89, 121
 - dovetail 67
 - epoxy 89, 121
 - expansion 121
 - framing 172
 - hollow wall 121
 - lead screw 122
 - machinery 67
 - masonry 98
 - metal nailing 121
 - nailing 121
 - nylon nailing 121
 - partition 98
 - plastic screw 122
 - rafter 172
 - rigid 98

- roof safety 21
 screw 69, 121
 sill 172
 steel 98
 stone 98
 super high-tensile 620
 toggle-bolt 121
 wedge 122
 Anechoic chamber 446
 Angle corner 377
 curb edging 129
 fiberglass 215
 valve bronze 479
 valve plastic 481
 Anti-siphon device 492
 Apartment call system 587
 hardware 296
 Appliance 400
 plumbing 498, 499
 residential 400, 565
 Approach ramp 344
 Arch culvert oval 662
 laminated 193
 radial 193
 Architectural fee 10, 791
 Area clean-up 43
 window well 388
 Ark 419
 Armored cable 552
 Arrow 637
 Artificial grass surfacing 638
 turf 638
 Asbestos abatement 41
 abatement equipment 40
 area decontamination 43
 demolition 42
 disposal 43
 encapsulation 44
 remediation plan/method 40
 removal 42
 removal process 804
 Ash conveyor 418
 receiver 379, 430
 urn 430
 Ashlar stone 113
 veneer 112
 Asphalt base sheet 240
 block 634
 block floor 634
 coating 222
 concrete 594
 curb 635
 cutting 34
 distributor 696
 felt 240, 241
 flashing 246
 flood coat 240
 mix design 15
 pavement 638
 paver 697
 plant portable 699
 primer 220, 338
 roof cold-applied built-up 240
 roof shingle 230
 sealcoat rubberized 630
 sheathing 192
 shingle 230
 sidewalk 630
 testing 11
 Asphaltic binder 632
 concrete 632
 on rete paving 632
 pulverization 646
 pavement 632
 paving course 632
 Aspirator dental 417
 Astragal adjustable 305
 aluminum 304
 exterior moulding 304
 magnetic 304
 molding 206
 one piece 304
 overlapping 304
 rubber 304
 split 304
 steel 304
 Astronomy observation dome 455
 Athletic backstop 640
 carpet indoor 343
 equipment 412
 paving 638
 pole 414
 post 415
 Atomizer water 41
 Attachment ripper 699
 Attachments skidsteer 695
 Attic stair 403
 Audio masking 458
 Audiometric room 446
 Auditorium chair 435
 Auger boring 29
 earth 692
 hole 28
 Augering 594
 Auto park drain 495
 Autoclave aerated conc. block 104
 Automatic fire-suppression 474
 flush 505
 opener 296
 opener commercial 296
 opener industrial 296
 operator 296
 sliding entrance 283
 sprinkler system 645
 teller 397
 wall switch 567
 washing machine 402
 Automotive equipment 394
 lift 467
 spray painting booth 394
 Autopsy equipment 418
 Auto-scrub machine 696
 Awning canvas 386
 fabric 386
 window 288, 386
 window aluminum 286
 window metal-clad 289
 window vinyl-clad 291
 Axial flow fan 525
- B**
- Backer rod 256
 rod polyethylene 64
 Backerboard 222
 cementitious 324
 Backfill 608, 609
 compaction 852
 dozer 608
 planting pit 647
 structural 608
 trench 599, 601
 Backflow preventer 492
 Backhoe 603, 693
 bucket 694
 extension 699
 Backsplash 427
 countertop 428
 Backstop athletic 640
 baseball 640
 basketball 413, 640
 chain link 640
 electric 413
 handball court 415
 squash court 415
 tennis court 640
 Backup block 105
 Backwater valve 496
 Baffle roof 253
 Bag disposable 41
 glove 42
 Baked enamel door 264
 enamel frame 263
 Balanced entrance door 284
 Balancing air 513
 water 514
 Balcony fire escape 154
 Bale hay 619
 Baler 419
 Ball valve 482
 valve bronze 480
 valve plastic 481
 wrecking 699
 Ballast fixture 578
 railroad 670
 Ballistic door steel 278
 door wood 278
 Baluster wood stair 209
 Balustrade painting 358
 Bamboo flooring 334
 Band joist framing 148
 riser 411
 Bank counter 397
 equipment 397
 run gravel 594
 window 397
 Banquet booth 433
 Baptistry 419
 Bar bell 412
 chair reinforcing 69
 front 457
 grab 378
 grating tread 160
 grouted 73
 joist painting 141
 masonry reinforcing 99
 panic 298
 restaurant 433
 tie reinforcing 68
 touch 298
 towel 379
 tub 378
 ungROUTED 73
 Zee 328
 Barbed wire fence 639
 Barber chair 398
 equipment 398
 Barge construction 702
 Bariatric equipment 416
 lift 416
 Bark mulch 646
 mulch redwood 647
 Barrel bolt 296
 Barrels flasher 696
 reflectorized 696
 Barricade 23, 672
 flasher 696
 tape 23
 Barrier acoustical 347
 and enclosure 23
 crash 672
 delineator 672
 dust 23
 highway sound traffic 645
 impact 672
 median 672
 moisture 223
 parking 637
 plenum 347
 security 396
 separation 41, 46
 slipform paver 699
 weather 230
 X-ray 459
 Base cabinet 424, 425
 carpet 343
 ceramic tile 328
 column 172
 course 631
 course drainage layer 631
 gravel 631
 masonry 110
 molding 196
 plate column 134
 quarry tile 330
 resilient 337
 road 631
 screed 69
 sheet 240, 241
 sheet asphalt 240
 sink 425
 stabilizer 700
 stone 113, 631
 terrazzo 339, 340
 vanity 426
 wall 337
 wood 196
 Baseball backstop 640
 scoreboard 413
 Baseboard demolition 170
 heat 544
 heat electric 547
 heater electric 547
 Basement bulkhead stair 84
 Basement/utility window 287
 Baseplate scaffold 19
 shoring 19
 Basic finish material 314
 Basketball backstop 413, 640
 equipment 413
 scoreboard 413
 Batch trial 15
 Bath paraffin 416
 steam 448
 whirlpool 416, 445
 Bathroom 502
 accessory 329, 378, 379
 exhaust fan 527
 faucet 503
 fixture 500-502
 heater & fan 527
 soaking 502
 Bathtub bar 378
 enclosure 374
 removal 479
 residential 502
 Batt acoustical 346
 insulation 225
 thermal 346
 Bay wood window dbl. hung 290
 Bead blast demo 315
 board insulation 446
 casing 328
 corner 321, 328
 parting 207
 Beam & girder framing 181
 and girder formwork 52
 bond 98, 105
 bondcrete 323
 bottom formwork 52
 castellated 134
 ceiling 212
 concrete 75

- concrete placement 78
- concrete placement grade 79
- decorative 212
- drywall 324
- fiberglass wide flange 215
- fireproofing 254
- formwork side 53
- hanger 172
- laminated 193
- load-bearing stud wall box 144
- mantel 212
- plaster 322
- precast 85
- precast concrete 84
- precast concrete tee 85
- reinforcing 71
- reinforcing bolster 68
- side formwork 53
- soldier 623
- test 15
- wood 181, 189
- Bearing pad 126
- Bed molding 199
- Bedding brick 634
- pipe 609
- Belgian block 636
- Bell 412
- & spigot pipe 494
- bar 412
- caisson 627
- church 412
- system 574
- Bellow expansion joint 518
- Belt material handling 678
- Bench aluminum 437
- fiberglass 437
- folding 436
- greenhouse 451
- park 437
- planter 437
- plastic 384
- player 438
- wood 437
- work 410
- Bentonite 223, 624
- panel waterproofing 223
- Berm pavement 635
- road 635
- Bevel glass 307
- siding 237
- Bicycle rack 414
- trainer 412
- Bi-fold door 265, 270
- hangar door aircraft 278
- Bin part 385
- retaining wall metal 643
- Binder asphaltic 632
- Biometric identity access 306
- Bi-passing closet door 271
- Birch door 270, 271, 273
- molding 206
- paneling 208
- wood frame 213
- Bird control netting 389
- Bit core drill 90
- Bituminous block 634
- coating 222, 654
- concrete curb 635
- paver 697
- Bitum.-stabilized base course 631
- Blackboard 376
- Blanket curing 83
- insulation 514
- insulation wall 225
- sound attenuation 346
- Blast curtain 423
- demo bead 315
- floor shot 315
- Blaster shot 698
- Blasting 602
- cap 603
- mat 603
- water 95
- Bleacher 451
- outdoor 451
- stadium 451
- telescoping 436
- Blind exterior 214
- structural bolt 126
- vertical 422
- vinyl 214, 422
- window 422
- wood 423
- Block acoustical 108
- asphalt 634
- autoclave concrete 104
- backup 105
- belgian 636
- bituminous 634
- Block, brick and mortar 823
- Block cap 110
- chimney 104
- column 105
- concrete 104-108, 824
- concrete bond beam 105
- concrete exterior 107
- corner 110
- decorative concrete 105
- filler 359
- floor 336
- floor wood 335
- glass 110
- glazed 110
- glazed concrete 109
- grooved 106
- ground face 106
- hexagonal face 107
- high strength 107
- insulation 105
- insulation insert concrete 105
- lightweight 108
- lintel 108
- manhole 664
- partition 108
- patio 114, 242
- profile 106
- reflective 110
- scored 106
- scored split face 106
- sill 110
- slotted 108
- slump 106
- solar screen 109
- split rib 106
- wall removal 31
- Blocking carpentry 180
- steel 180
- wood 180, 184
- Blood pressure unit 416
- Bloodbank refrigeration 410
- Blower insulation 697
- pneumatic tube 469
- Blown-in cellulose 227
- fiberglass 227
- insulation 227
- Blueboard 323
- partition 317
- Bluegrass sod 648
- Bluestone 112
- sidewalk 630
- sill 115
- step 631
- Board & batten siding 237
- batten fence 642
- bulletin 366
- ceiling 331
- control 367, 411
- directory 367, 368
- dock 395
- drain 223
- gypsum 324
- high abuse gypsum 327
- insulation 224
- insulation foam 224
- paneling 209
- partition gypsum 317
- partition NLB gypsum 317
- sheathing 191
- siding wood 237
- valance 425
- verge 205
- Boat work 702
- Body harness 21
- Boiler 533
- control system 515
- demolition 512
- electric 533
- electric steam 533
- gas-fired 533
- gas/oil combination 533
- general 478
- hot water 533, 534
- insulation 515
- mobilization 595
- oil-fired 534
- removal 512
- steam 533, 534
- Bollard 128
- pipe 636
- security 671
- Bolster beam reinforcing 68
- slab reinforcing 68
- Bolt & hex nut steel 123
- anchor 64, 98
- barrel 296
- blind structural 126
- flush 296
- high strength 124
- remove 120
- steel 172
- Bolt-on circuit breaker 569
- Bond beam 98, 105
- performance 13, 800
- Bondcrete 323
- Bonding agent 50
- surface 97
- Bookcase 386, 425
- Bookshelf 435
- Boom truck 700
- Booster fan 525
- Boot pile 625
- Booth acoustical 456
- banquet 433
- fixed 433
- mounted 433
- painting 394
- portable 456
- ticket 456
- Border light 580
- Bored pile 626
- Borer horizontal 699
- Boring and exploratory drilling 28
- auger 29
- cased 28
- horizontal 654
- machine horizontal 692
- Borosilicate pipe 510
- Borrow 594, 609
- Bosun chair 21
- Bottle storage 404
- vial 47
- Boulder excavation 603
- Boundary and survey marker 28
- Bow & bay metal-clad window 290
- window 290
- Bowl toilet 500
- Bowling alley 413
- Bowstring truss 194
- Box & wiring device 557
- beam load-bearing stud wall 144
- buffalo 659
- culvert formwork 54
- distribution 660
- electrical 558
- electrical pull 557
- flow leveler distribution 660
- locker 383
- mail 384
- pull 557
- safety deposit 397
- stair 209
- steel mesh 620
- storage 17
- termination 587
- trench 698
- utility 654
- vent 99
- Boxed header beam 148
- header beam framing 148
- Boxing ring 413
- Brace cross 130
- Bracing 180
- framing 151
- let-in 180
- load-bearing stud wall 143
- metal 180
- metal joist 147
- roof rafter 151
- shoring 19
- support seismic 482
- wood 180
- Bracket roof 21
- scaffold 19
- sidewall 21
- Braided bronze hose 491
- Branch circuit fusible switch 569
- Brass hinge 301
- pipe 486
- salvage 479
- screw 171
- valve 479
- Brazed connection 556
- Break glass station 591
- tie concrete 81
- Breaker circuit 574
- pavement 695
- vacuum 492
- Breeching draft inducer 532
- insulation 515
- Brick 103
- adobe 111
- anchor 98
- bedding 634
- Brick, block and mortar 823
- Brick cart 696
- catch basin 664
- chimney simulated 380
- cleaning 95
- common 102
- common building 102
- concrete 109
- demolition 96, 314
- economy 102
- edging 650

- engineer 102
 face 102, 823
 floor 335, 634
 flooring miscellaneous 335
 manhole 664
 molding 203, 206
 oversized 101
 paving 634
 removal 30
 sand 51
 saw 94
 sidewalk 634
 sill 115
 simulated 116
 stair 112
 step 630
 structural 102
 testing 15
 utility 102
 veneer 100
 veneer demolition 96
 veneer thin 101
 vent 530
 vent box 99
 wall 111
 wall panel 111
 wash 95
 Bricklaying 823
 Bridge 644
 concrete 644
 crane 678
 pedestrian 644
 sidewalk 20
 Bridging 181
 framing 151
 joist 140
 load-bearing stud wall 144
 metal joist 147
 roof rafter 151
 Broiler 406
 Bronze angle valve 479
 ball valve 480
 body strainer 519
 cross 420
 globe valve 481
 letter 368
 plaque 368
 push-pull plate 300
 swing check valve 480
 valve 479
 Broom cabinet 425
 finish concrete 80
 sidewalk 698
 Brown coat 340
 Brownstone 114
 Brush chipper 693
 clearing 596
 cutter 693, 694
 mowing 596
 Bubbler 508
 drinking 508
 Buck anchor 98
 rough 183
 Bucket backhoe 694
 earshell 693
 concrete 692
 dragline 693
 excavator 699
 pavement 699
 Buffalo box 659
 Bulgy concrete 80, 692
 Builder's risk insurance 794
 Building air supported 449
 component deconstruction 36
 deconstruction 35
 demo footing & foundation 31
 demolition 30
 demolition selective 31
 directory 367, 587
 greenhouse 450
 hangar 456
 hardware 296
 insulation 227
 model 10
 moving 38
 paper 230
 permit 14
 portable 17
 prefabricated 450
 relocation 38
 shoring 621
 sprinkler 474
 temporary 17
 tension 450
 Built-in range 400
 Built-up roof 240
 roofing 831
 roofing component 240
 roofing system 240
 Bulb tee subpurlin 87, 135
 Bulk bank measure excavating 603
 dozer excavating 604
 drilling and blasting 602
 scraper excavation 605
 storage dome 455
 Bulkhead door 274
 Bulkhead/cellar door 274
 Bulldozer 608, 694
 Bullet resistant window 397
 Bulletin board 366
 board cork 366
 Bulletproof glass 311
 Bullfloat concrete 692
 Bullnose block 107
 Bumper car 377, 636, 637
 dock 395
 door 296, 300
 parking 637
 railroad 670
 wall 300, 378
 Buncher feller 693
 Bunk house trailer 17
 Burglar alarm indicating panel 590
 Burial cell 38
 Burlap curing 83
 rubbing concrete 81
 Bus-duct cable tap box 572
 copper 571
 fitting 571
 plug in 571
 switch 572
 tap box 572
 Bush hammer 81
 hammer finish concrete 81
 Butt fusion machine 696
 Butterfly valve 512, 656
 Butyl caulking 257
 expansion joint 251
 flashing 247
 rubber 256
 waterproofing 223
 corner base 425
 corner wall 425
 current transformer 573
 defibrillator 382
 demolition 170
 door 424, 426
 electric 573
 electrical hinged 558
 filler 425
 fire equipment 382
 hardboard 424
 hardware 426
 hinge 426
 hose rack 382
 hotel 380
 key 306
 kitchen 424
 kitchen metal 428
 laboratory 427
 medicine 379
 metal 428
 nurse station 428
 oven 425
 portable 404
 school 427
 shower 373
 stain 354
 storage 427
 strip 587
 transformer 573
 valve 382
 varnish 354
 wall 425, 427, 428
 wardrobe 385
 Cable aircraft 138
 armored 552
 control 555
 copper 552, 555
 copper shielded 551
 crimp termination 553
 electric 552, 553
 electrical 555
 guide rail 672
 jack 701
 MC 553
 medium-voltage 551
 mineral insulated 554
 pulling 698
 PVC jacket 555
 railing 163
 safety railing 138
 sheathed nonmetallic 554
 sheathed Romex 554
 tap box bus-duct 572
 tensioning 698
 termination 553
 trailer 698
 tray 559
 tray aluminum 559
 tray ladder type 559
 wire THWN 555
 Cafe door 272
 Caisson bell 627
 concrete 626
 displacement 627
 foundation 626
 Caissons 854
 Calcium chloride 50, 619
 Call system apartment 587
 system emergency 587
 system nurse 587
 Camera TV closed circuit 590
 Canopy 387
 entrance 387, 453
 entry 386
 framing 127
 metal 387
 patio/deck 387
 wood 186
 Cant roof 186, 241
 Cantilever needle beam 622
 retaining wall 642
 Canvas awning 386
 Cap blasting 603
 block 110
 concrete placement pile 79
 dowel 72
 pile 77
 post 172
 Capacitor indoor 576
 Car bumper 377, 636, 637
 tram 698
 Carbon dioxide extinguisher 474
 Carborundum rub finish 81
 Card catalog file 434
 key access 305
 Carillon 412
 Carousel compactor 419
 Carpentry finish 424
 Carpet base 343
 computer room 344
 felt pad 342
 floor 343
 maintenance 314
 nylon 343
 pad 342
 pad commercial grade 342
 padding 342
 removal 314
 sheet 343
 stair 343
 tile 342
 tile removal 314
 urethane pad 342
 wool 343
 Carport 387
 Carrel 434
 Carrier ceiling 320
 channel 333
 fixture support 505
 Carrier/support fixture 505
 Cart brick 696
 concrete 80, 692
 food delivery 405
 mounted extinguisher 383
 Carving stone 113
 Case display 427
 exhibit 427
 good metal 431
 good wood 432
 refrigerated 403
 Cased boring 28
 Casement window 286-288, 290
 window metal-clad 289
 window vinyl 294
 Casework 425
 cabinet 426
 custom 424
 demolition 170
 door manufactured hardwood 426
 door plastic laminate 424
 educational 427
 frame wood 425
 ground 188
 hospital 427
 metal 306, 427
 painting 354
 varnish 354
 Cash register 398
 Casing bead 328
 molding 197
 Cast in place concrete 75, 78

C

- in place concrete curb 635
- in place pile 628
- in place pile add 628
- in place terrazzo 339
- iron bench 437
- iron damper 381
- iron grate cover 159
- iron manhole cover 663
- iron pipe 494
- iron pull box 558
- iron radiator 545
- iron trap 494
- trim lock 299
- Castellated beam 134
- Caster scaffold 19
- Casting construction 161
 - fiberglass 215
- Cast-iron column base 161
 - weld rod 127
- Catch basin 663
 - basin brick 664
 - basin cleaner 699
 - basin precast 664
 - basin removal 29
 - basin vacuum 699
 - door 426
- Cathodic protection 576
- Catwalk scaffold 20
- Caulking 258
 - lead 494
 - oakum 494
 - polyurethane 257
 - sealant 257
- Cavity wall 111
 - wall grout 98
 - wall insulation 226, 227
 - wall reinforcing 99
- Cedar closet 208
 - fence 642
 - paneling 209
 - post 213
 - roof deck 190
 - roof plank 190
 - shingle 231
 - siding 237
- Ceiling 331
 - acoustical 331, 332
 - acrylic 332
 - beam 212
 - board 331
 - board acoustic 331
 - board fiberglass 331
 - bondcrete 323
 - bracing seismic 333
 - carrier 320
 - demolition 314
 - diffuser 528
 - drywall 325
 - eggcrate 332
 - fan 525
 - framing 182
 - furring 188, 318, 320
 - heater 402
 - insulation 224, 227
 - lath 320
 - luminous 332, 582
 - molding 199
 - painting 358, 359
 - panel metal 334
 - plaster 322
 - polystyrene 332, 446
 - register 529
 - stair 403
 - support 127
 - suspended 320, 332
 - suspension system 333
 - tile 332
 - woven wire 374
- Cell equipment 397
 - prison 457
- Cellar door 274
 - wine 404
- Cellular concrete 76
 - decking 143
- Cellulose blown-in 227
 - insulation 226
- Cement adhesive 338
 - admixture 81
 - color 97
 - content 815
 - flashing 220
 - grout 98, 622
 - Keene 322
 - liner 654
 - masonry 96
 - masonry unit 105-108
 - mortar 329, 331, 822
 - parging 222
 - plaster 446
 - Portland 51
 - terrazzo portland 339
 - testing 15
 - underlayment self-leveling 88
 - vermiculite 254
- Cementitious backerboard 324
 - waterproofing 223
 - wood fiber plank 87
- Center bulb waterstop 63
- Central vacuum 399
 - vacuum unit 682
- Centrifugal airfoil fan 526
 - liquid chiller 538
 - pump 697
 - type HVAC fan 525
- Ceramic coating 362
 - mulch 647
 - tile 328
 - tile accessory 330
 - tile countertop 429
 - tile demolition 315
 - tile floor 328
 - tile repair 330
 - tile waterproofing membrane 331
 - tiling 328, 331
- Certification welding 16
- Chain core rope 396
 - fall hoist 701
 - hoist 679
 - hoist door 280
 - link backstop 640
 - link fence 24, 639, 641
 - link fence high-security 640
 - link fence paint 350
 - link gate 640
 - link industrial fence 639
 - saw 698
 - steel 162
 - trencher 601, 695
- Chair 434
 - auditorium 435
 - barber 398
 - bosun 21
 - dental 417
 - hydraulic 417
 - life guard 444
 - lift 467
 - locker bench 384
 - molding 206
 - movie 409
 - office 432
 - portable 411
 - rail demolition 170
 - seating 435
- Chalkboard 364
 - electric 365
 - fixed 364
 - freestanding 366
 - liquid chalk 364
 - metal 365, 376
 - portable 366
 - sliding 365
 - swing leaf 365
 - wall hung 364
- Chamber anechoic 446
 - decontamination 41, 46
 - echo 457
- Chamfer strip 60
- Channel carrier 333
 - curb edging 129
 - frame 263
 - furring 318, 328
 - grating tread 160
 - metal frame 263
 - siding 237
 - steel 321
- Channelizing traffic 672
- Charcoal type air filter 532
- Charge disposal 43
 - powder 125
- Charging desk 434
- Check floor 301
 - swing valve 480, 513
 - valve 472, 513
- Checkered plate 159
 - plate cover 159
 - plate platform 159
- Checkout counter 398
 - scanner 398
 - supermarket 398
- Chemical anchor 89, 121
 - * cleaning masonry 95
 - dry extinguisher 382
 - spreader 699
 - termite control 619
 - toilet 698
 - water closet 686
- Chest 434
- Chilled water coil 543
- Chiller centrifugal type water 538
 - water 538
- Chimney 101
 - accessory 380
 - all fuel vent 532
 - block 104
 - brick 101
 - demolition 96
 - fireplace 380
 - flue 116
 - foundation 75
 - metal 380
 - positive pressure 532
 - screen 380
 - simulated brick 380
 - vent 532
- Chip quartz 51
 - silica 51
 - white marble 51
 - wood 647
- Chipper brush 693
 - log 694
 - stump 694
- Chipping hammer 696
 - stump 595
- Chloride accelerator concrete 78
- Chlorination system 509
- Chlorosulfonated polyethylene 38
- Church bell 412
 - equipment 419
- equipment demolition 392
- pew 436
- Chute 468
 - linen 468
 - package 468
 - refuse 468
 - system 33
- Cinema equipment 408
- Circuit length 847
- Circuit-breaker 574
 - bolt-on 569
 - feeder section 569
- Circular rotating entrance door 284
 - saw 698
 - slipforms 806
- Circulating pump 520
- Clamp water pipe ground 556
- Clamshell 603, 676
 - bucket 693
- Clapboard painting 351
- Classroom heating & cooling 544
 - seating 435
- Clay fire 116
 - tennis court 638
 - tile 233
 - tile coping 117
- Clean control joint 63
 - room 445
 - tank 39
- Cleaner catch basin 699
 - crack 699
 - steam 698
- Cleaning & disposal equipment 407
 - brick 95
 - face brick 822
 - masonry 94
 - metal 120
 - up 25
- Cleanout door 381
 - floor 483
 - pipe 483
 - PVC 484
 - tee 484
- Clean-up area 43
- Clear and grub site 595
 - grub 595
- Clearing brush 596
 - selective 596
 - site 595
- Clevis hook 162
- Climber mast 20
- Climbing crane 700
 - hydraulic jack 701
- Clip plywood 172
 - wire rope 136
- Clock equipment 587
 - timer 565
 - wall 431
- Closed circuit television system 590
 - circuit TV 397
 - deck grandstand 451
- Closer concealed 297
 - door 297
 - door electric automatic 297
 - door electro magnetic 297
 - electronic 297
 - floor 297
 - holder 297
- Closet cedar 208
 - door 265, 271
 - pole 206
 - rod 386
 - water 500, 504
- Closing coordinator door 301
- Closure trash 437
- Cloth hardware 641

- Clothes diver commercial 399
 CMU 104
 pointing 94
 Coal tar pitch 220, 241
 Coat brown 340
 glaze 358
 hook 379
 rack 385, 425
 rack & wardrobe 385
 scratch 340
 Coated roofing foamed 244
 Coating bituminous 222, 654
 ceramic 362
 concrete wall 361
 elastomeric 361
 epoxy 81, 361, 654
 exterior steel 362
 flood 241
 intumescent 361
 polyethylene 654
 reinforcing 72
 roof 220
 rubber 224
 silicone 224
 spray 222
 structural steel 824
 stucco wall 361
 trowel 222
 wall 361
 water repellent 224
 waterproofing 222
 Cock gas 479
 Coffee urn 405
 Cofferdam 623
 excavation 604
 Cohesion testing 15
 Coil cooling 543
 flanged 543
 Coiling door and grille 276
 Coiling-type counter door 276
 Coin operated gate 396
 CO₂ fire extinguishing system 474
 Coin-operated washer & dryer 399
 Cold mix paver 699
 roofing 240
 storage door 277
 storage room 446
 Collection box lobby 384
 concrete pipe sewage 659
 sewage drainage 661
 system dust 682
 Collector solar energy system 536
 Colonial door 270, 273
 wood frame 213
 Color floor 81
 wheel 580
 Coloring concrete 51
 Column 212
 accessory formwork 60
 aluminum 164, 212
 base 172
 base aluminum 161, 164
 base cast-iron 161
 base plate 134
 block 105
 bondcrete 323
 brick 101
 cap aluminum 164
 concrete 75
 concrete block 105
 concrete placement 78
 cover 161
 cover aluminum 161
 cover glass 307
 cover stainless 161
 demolition 96
 drywall 324
 fireproof 254
 formwork 53
 framing 182
 lally 128
 laminated wood 194
 lath 320
 lightweight 128
 ornamental 164
 plaster 322
 plywood formwork 53
 precast 85
 precast concrete 85
 reinforcing 71
 removal 96
 round fiber tube formwork 53
 round fiberglass formwork 53
 round steel formwork 53
 steel framed formwork 54
 stone 113
 structural 128
 structural shape 129
 wood 182, 189, 212
 Combination device 562
 storm door 270, 273
 Comfort station 455
 Command dog 24
 Commercial automatic opener 296
 dishwasher 407
 door 264, 269, 274
 folding partition 376
 gas water heater 499
 greenhouse 450
 lavatory 504
 mail box 384
 metal door 265
 oil-fired water heater 500
 refrigeration 403, 446
 safe 396
 toilet accessory 378
 water heater 499, 500
 water heater electric 499
 Commissioning 25
 Common brick 102
 building brick 102
 nail 170
 Communicating lockset 298, 299
 Communication optical fiber 586
 system 587
 Compact fill 609
 Compaction 619
 backfill 852
 soil 608
 structural 619
 test Proctor 16
 vibroflotation 853
 Compactor 418
 earth 693
 landfill 694
 residential 401
 waste 419
 Compartment shower 373
 toilet 369
 Compensation workers' 12
 Composite decking 185
 door 264, 272
 insulation 229
 metal deck 141
 rafter 185
 Composition floor 342
 flooring 336, 341
 flooring removal 314
 Compound dustproofing 50
 Compressed air equip. auto. 394
 Compression seal 256
 Compressive strength 15
 Compressor air 695
 tank mounted 516
 Computer air conditioning 542
 floor 344
 room carpet 344
 Concealed closer 297
 Concrete 812-816
 acid etch finish 81
 admixture 50
 asphalt 594
 asphaltic 632
 beam 75
 block 104-108, 824
 block autoclave 104
 block back-up 104
 block bond beam 105
 block column 105
 block decorative 105
 block demolition 32
 block exterior 107
 block foundation 107
 block glazed 109
 block grout 98
 block insulation 227
 block insulation insert 105
 block interlocking 107
 block lintel 108
 block painting 359
 block partition 108
 block planter 634
 break tie 81
 brick 109
 bridge 644
 broom finish 80
 bucket 692
 buggy 80, 692
 bullfloat 692
 burlap rubbing 81
 bush hammer finish 81
 caisson 626
 cart 80, 692
 cast in place 75, 78
 catch basin 664
 cellular 76
 chloride accelerator 78
 coloring 51
 column 75
 conversion 816
 conveyer 692
 coping 117
 core drilling 89
 crane and bucket 79
 cribbing 642
 curb 635
 curing 83, 633
 curing compound 83
 cutout 32
 cylinder 15
 dampproofing 52
 demo 29
 demolition 32, 50
 direct chute 79
 distribution box 660
 drilling 91
 equipment rental 692
 fiber reinforcing 78
 field mix 817
 finish 633
 float finish 80, 81
 floor edger 692
 floor grinder 692
 floor patching 50
 floors 818
 form liner 58
 forms 806, 807
 furring 187
 granolithic finish 88
 grinding 82
 grout 98
 hand hole 667
 hand mix 77
 hand trowel finish 80
 hardener 81
 hot weather 78
 hydrodemolition 29
 impact drilling 91
 integral color 50
 integral topping 88
 integral waterproofing 51
 joist 75
 lance 697
 lift slab 817
 lightweight 76, 78, 821
 lightweight insulating 87
 machine trowel finish 80
 manhole 664, 667
 materials 815
 membrane curing 83
 mix design 15
 mixer 692
 mixes 815, 816
 non-chloride accelerator 78
 pan tread 80
 paper curing 83
 patio block 634
 paver 697
 paving surface treatment 633
 pier and shaft drilled 627
 pile prestressed 624
 pipe 661
 pipe removal 30
 placement beam 78
 placement column 78
 placement footing 79
 placement slab 79
 placement wall 79
 placing 78, 817
 plantable paver precast 634
 planter 437
 polishing 82
 post 672
 pressure grouting 622
 prestressed 820
 prestressed precast 819
 processing 82
 pump 692
 pumped 79
 ready mix 78
 reinforcing 71
 removal 29
 retaining wall 642
 retaining wall segmental 643
 retarder 78
 sand 51
 sandblast finish 81
 saw 692
 saw blade 89
 scarify 315
 septic tank 660
 shingle 233
 short load 78
 sidewalk 630
 slab 75
 slab conduit 559
 slab cutting 89
 slab X-ray 16
 small quantity 77
 spreader 697
 stair 77
 stair finish 81
 strengths 816
 tank 658

- tank aboveground storage 518
 testing 14
 tie railroad 670
 tile 233
 tilt-up 821
 topping 88
 track cross tie 670
 trowel 692
 truck 692
 truck holding 78
 unit paving slab precast 634
 utility vault 654
 vertical shoring 61
 vibrator 692
 volumetric mixed 78
 wall 76
 wall coating 361
 wall panel tilt-up 86
 wall patching 50
 water reducer 78
 water storage tank 658
 wheeling 80
 winter 78
 Concrete-filled steel pile 625
 Condensate pump 521
 removal pump 521
 return pump 521
 steam meter 521
 Condenser 538
 air cooled belt drive 538
 air cooled direct drive 538
 Condensing unit air cooled 538
 Conditioner general air 512
 Conductive floor 339, 341
 rubber & vinyl flooring 339
 terrazzo 341
 Conductor 552
 & grounding 551-554
 Conductors 849
 Conduit & fitting flexible 561
 aluminum 556
 concrete slab 559
 electrical 556
 high installation 557
 in slab PVC 559
 in trench electrical 559
 in trench steel 559
 intermediate steel 557
 raceway 556
 rigid in slab 559
 rigid steel 556
 Cone traffic 23
 Confessional 419
 Connection brazed 556
 fire-department 472
 motor 561
 standpipe 472
 Connector flexible 491
 gas 491
 joist 172
 screw-on 553
 timber 172
 water copper tubing 491
 wire 553
 Consolidation test 15
 Construction aid 17
 barge 702
 casting 161
 cost index 11
 management fee 10
 photography 14
 sump hole 607
 temporary 22
 time 10, 792
 Containment hazardous waste 38
 Contaminated soil 39
 Contingency 11
 Continuous hinge 302
 Contractor overhead 25
 scale 390
 Control & motor starter 571
 air 518
 board 367, 411
 cable 555
 damper volume 523
 hand-off-automatic 575
 joint 63, 99
 joint clean 63
 joint PVC 99
 joint rubber 99
 joint sawn 63
 radiator supply 519
 station 575
 station stop-start 575
 system air compressor 516
 system boiler 515
 system cooling 515
 system electronic 515
 system pneumatic 515
 system split system 515
 system ventilator 515
 tower 457
 valve heating 519
 Controller time system 587
 Convection oven 406
 Conveyor hydronic heating 545
 Conveyor 678
 ash 418
 door 527
 material handling 678
 system 468
 Cooking equipment 400, 406
 range 400
 Cooler 446
 beverage 403
 water 509
 Cooling coil 543
 control system 515
 tower 540
 tower fiberglass 540
 tower forced-draft 540
 tower louver 530
 tower stainless 540
 Coping 113, 117
 aluminum 117
 clay tile 117
 concrete 117
 removal 96
 terra cotta 104, 117
 Copper bus-duct 571
 cable 552, 555
 downspout 248
 drum trap 494
 DWV tubing 486
 flashing 246, 247, 495
 gravel stop 248
 gutter 250
 pipe 486
 reglet 251
 rivet 125
 roof 245
 salvage 479
 shielded cable 551
 wall covering 344
 wire 554, 555
 Core drill 15, 692
 drill bit 90
 drilling concrete 89
 testing 15
 Coreboard 326
 Cork floor 338
 insulation 446
 tile 338
 wall tile 344
 Corner base cabinet 425
 bead 321, 328
 block 110
 guard 377
 guard metal 377
 protection 377
 wall cabinet 425
 Cornerboard PVC 217
 Cornice drain 497
 molding 199, 202
 painting 358
 stone 113
 Correspondence lift 468
 Corridor sign 368
 Corrosion resistance 654
 resistant pipe 510
 Corrugated metal pipe 661, 664
 pipe 664
 roof tile 233
 siding 234-236
 steel pipe 664
 Cost control 14
 mark-up 13
 Cot prison 434
 Counter bank 397
 checkout 398
 door 276
 door coiling-type 276
 flashing 251
 hospital 427
 top 428
 top demolition 170
 Countertop backsplash 428
 ceramic tile 429
 engineered stone 430
 granite 429
 laboratory 429
 laminated 428
 maple 428
 marble 429
 plastic-laminate-clad 428
 postformed 428
 sink 501
 solid surface 429
 stainless steel 428
 Course drainage layer base 631
 wearing 632
 Court air supported 449
 handball 448
 paddle tennis 415
 racquetball 448
 squash 448
 Cove base ceramic tile 328
 base terrazzo 340
 molding 199
 Cover aluminum trench 159
 cast iron grate 159
 checkered plate 159
 column 161
 manhole 663
 pool 444
 stadium 449
 stair tread 24
 tank 448
 trench 159
 walkway 387
 Covering wall 838
 CPVC pipe 490
 valve 482
 Crack cleaner 699
 filler 699
 Crane 679
 and bucket concrete 79
 bridge 678
 climbing 700
 crawler 700
 crew daily 18
 hydraulic 679, 700
 jib 679
 material handling 679
 mobilization 595
 overhead bridge 678
 rail 678
 scale 390
 tower 18, 700
 truck mounted 700
 Crash barrier 672
 Crawler crane 700
 drill rotary 696
 shovel 694
 Crematory 418
 Crew daily crane 18
 forklift 18
 survey 24
 Cribbing concrete 642
 Crimp termination cable 553
 Critical path schedule 14
 Cross brace 130
 wall 420
 Crown molding 199, 206
 Crushed stone 594
 stone sidewalk 630
 CSPE roof 242
 Cubicle 374
 curtain 374
 detention 295
 shower 502
 toilet 373
 track & hardware 374
 Cultured stone 117
 Culvert end 662
 reinforced 661
 Cupola 387
 Cupric oxychloride floor 341
 Curb 635
 and gutter 635
 asphalt 635
 builder 692
 concrete 635
 edging 129, 636
 edging angle 129
 edging channel 129
 extruder 693
 granite 113, 636
 inlet 636
 precast 635
 removal 29
 roof 186
 seal 630
 slipform paver 699
 terrazzo 339, 340
 Curing blanket 83
 compound concrete 83
 concrete 83, 633
 concrete membrane 83
 concrete paper 83
 concrete water 83
 paper 230
 Current transformer 566
 transformer cabinet 573
 Curtain air 527
 air barrier 527
 blast 423
 cubicle 374
 damper fire 523
 gymnasium divider 413
 rod 378
 sound 457
 stage 411
 track 411

- vinyl 378
 wall 285
 wall glass 285
 wall glazed aluminum 285
 Custom casework 424
 Cut stone curb 636
 stone trim 114
 Cutoff pile 594
 Cutout counter 428
 demolition 32
 slab 32
 Cutter brush 693, 694
 Cutting asphalt 34
 block 428
 concrete floor saw 89
 concrete slab 89
 concrete wall saw 89
 masonry 34
 steel 122
 torch 122, 698
 wood 34
 Cylinder concrete 15
 lockset 298
 recore 298, 300
- D**
- Daily crane crew 18
 Dairy case 403
 Damper 523
 assembly splitter 523
 fire curtain 523
 fireplace 381
 foundation vent 99
 multi-blade 523
 volume-control 523
 Dampproofing 223
 Darkroom 447
 door 278
 equipment 400
 lead lined 447
 revolving 447
 sink 400
 Dasher hockey 445
 ice rink 445
 Day gate 279
 Daylighting sensor 567
 Dead lock 299
 Deadbolt 299, 301
 Deadlocking latch 299
 Deaerator 518
 Deciduous shrub 649
 Deck drain 495
 edge form 143
 framing 184
 metal floor 143
 roof 190, 192
 slab form 142
 wood 190
 Decking 830
 cellular 143
 composite 185
 floor 141-143
 form 142
 roof 142
 Deconstruction building 35
 building component 36
 material handling 37
 Decontamination asbestos area 43
 chamber 41, 46
 enclosure 41, 43, 46
 equipment 41
 Decorative beam 212
 block 105
 fence 641
 Decorator device 562
 switch 562
 Deep freeze 401
 seal trap 494
 therapy room 458
 Deep-longspan joist 138
 Defibrillator cabinet 382
 Dehumidifier 696
 Delicatessen case 403
 Delineator barrier 672
 Delivery charge 22
 Deluge valve assembly sprinkler 474
 Demo air supported structure 440
 concrete 29
 footing & foundation building 31
 garden house 440
 geodesic dome 440
 greenhouse 440
 hangar 440
 lightning protection 440
 pre-engineered steel building 441
 silo 441
 sound control 441
 special purpose room 441
 specialty 364
 storage tank 442
 swimming pool 442
 tension structure 443
 thermal & moisture prot. 220
 X-ray/radio freq protection ... 443
 Demolish decking 167
 remove pavement and curb 29
 Demo. 31, 96, 315, 479, 594, 803
 air compressor 392
 asbestos 42
 bank equipment 392
 barber equipment 392
 baseboard 170
 boiler 512
 bowling alley 393
 brick 96, 314
 brick veneer 96
 cabinet 170
 casework 170
 ceiling 314
 central vacuum 392
 ceramic tile 315
 checkout counter 392
 chimney 96
 church equipment 392
 column 96
 commercial dishwasher 393
 concrete 32, 50
 concrete block 32
 cooking equipment 393
 crematory 392
 darkroom equipment 393
 dental equipment 393
 detection equipment 392
 disappearing stairway 393
 dishwasher hood 393
 disposal 32
 door 260
 drywall 314, 315
 ductwork 512
 electrical 550
 equipment 392
 explosive/implosive 31
 fencing 30
 fire protection system 393
 fireplace 96
 flashing 42
 flooring 314
 food case 392
 food delivery cart 393
 food dispensing equip 393
 food preparation equip 393
 food storage equipment 393
 food storage shelving 393
 framing 167
 fume hood 393
 garbage disposal 393
 glass 260
 granite 96
 gutter 220
 gutting 34
 hammer 693
 health club equipment 393
 hood & ventilation equip 393
 HVAC 512
 hydraulic gate 392
 ice machine 393
 implosive 31
 joist 167
 lath 314
 laundry equipment 392
 library equipment 392
 loading dock equipment 392
 lubrication equip auto 392
 masonry 32, 95, 315
 medical equipment 393
 metal 120
 metal stud 315
 millwork 170
 millwork & trim 170
 mold contaminated area 46
 movie equipment 392
 paneling 170
 parking equipment 392
 partition 315
 pavement 29
 physical therapy 393
 plaster 314, 315
 plenum 315
 plumbing 479
 plywood 314, 315
 post 168
 rafter 168
 railing 170
 residential water heater 393
 roofing 42, 221
 saw cutting 34
 selective building 31
 sewage pumping system 392
 sewage treatment 392
 shooting range 393
 site 29
 sound system 392
 spray paint booth 392
 stage equipment 392
 steel 120
 steel window 260
 stucco 315
 surgical light 393
 terra cotta 316
 terrazzo 315
 tile 314
 torch cutting 35
 trim 170
 truss 170
 vault day gate 392
 vault door and frame 392
 vocational shop equip 393
 wall 315
 wall and partition 315
 waste handling equipment 392
 wastewater treatment 392
 water softener 393
 whirlpool bath 393
 window 260
 window & door 260
 wood 314
 wood framing 166
 Demountable partition 375
 Dental chair 417
 equipment 417
 metal interceptor 496
 office equipment 417
 Dentil crown molding 200
 Depository night 397
 Derail railroad 670
 Derrick crane guyed 701
 crane stiffleg 701
 Desk 434
 Detection intrusion 590
 leak 592
 probe leak 592
 system 590
 tape 655
 Detector explosive 590
 fire & heat 591
 infrared 590
 metal 590
 motion 590
 smoke 592
 temperature rise 591
 ultrasonic motion 590
 Detention cubicle 295
 door and frame 279
 equipment 279, 397
 Detour sign 23
 Developing tank 400
 Device & box wiring 558
 anti-siphon 492
 combination 562
 decorator 562
 exit 298
 GFI 563
 panic 298
 receptacle 563
 residential 561
 wiring 558, 573
 Dewater 606, 607
 pumping 607
 Dewatering 607, 852
 equipment 701
 Diamond lath 320
 plate tread 159
 Diaper station 378
 Diaphragm pump 697
 Diesel generator 575
 generator set 575
 hammer 693
 tugboat 702
 Diesel-engine-driven generator .. 575
 Diffuser ceiling 528
 opposed blade damper 528
 perforated aluminum 528
 rectangular 528
 steel 529
 T-bar mount 529
 Digital movie equipment 409
 Dimens. and wts. of sht. stl. 829
 Dimmer switch 561, 574
 Direct expansion A/C 544
 chute concrete 79
 Directional drill horizontal 699
 sign 369
 Directory 367
 board 367, 368
 building 367, 587
 Disappearing stair 403
 Disc harrow 693
 Discharge hose 697
 Dishwasher commercial 407
 residential 401
 Diskette safe 396
 Dispenser hot water 498

- napkin 379
- soap 379
- ticket 394
- toilet tissue 379
- towel 378
- Dispensing equipment food 406
- Dispersion nozzle 474
- Displacement caisson 627
- Display case 427
- Disposable bag 41
- Disposal 31
 - asbestos 43
 - charge 43
 - field 660
 - garbage 401, 408
 - or salvage value 35
 - waste 45, 419
- Distiller medical 416
 - water 416
- Distribution box 660
 - box concrete 660
 - box flow leveler 660
 - box HDPE 660
 - pipe water 655, 656
 - switchboard 569
- Distributor asphalt 696
- Ditching 607, 623
- Divider curtain 413
 - strip terrazzo 339
- Diving board 444
 - stand 444
- Dock board 395
 - board magnesium 395
 - bumper 395
 - equipment 395
 - floating 676
 - leveler 395
 - light 396
 - loading 395
 - shelter 395
 - truck 395
- Dog command 24
- Dome 455
 - drain 497
 - geodesic 455
 - roof 285
 - structures 840
- Door & window int. paint .. 355, 356
 - accessory 306
 - accordion 271
 - acoustical 279
 - acoustical folding 376
 - air lock 449
 - aluminum 261, 280
 - aluminum commercial 266
 - aluminum dbl. acting swing .. 282
 - aluminum-framed 284
 - aluminum-framed entrance ... 284
 - and frame detention 279
 - and grille coiling 276
 - and panel access 274
 - and window material 260
 - automatic entrance 283
 - balanced entrance 284
 - bell residential 564
 - bi-fold 265, 270
 - bi-passing closet 271
 - birch 270, 271, 273
 - blind 214
 - bulkhead 274
 - bulkhead/cellar 274
 - bullet resistant 397
 - bumper 296, 300
 - cabinet 424, 426
 - cafe 272
 - casing PVC 217
 - catch 426
 - chain hoist 280
 - cleanout 381
 - closer 297
 - closet 265, 271
 - closing coordinator 301
 - cold storage 277
 - colonial 270, 273
 - combination storm 270, 273
 - commercial 264, 269, 274
 - commercial floor 274
 - composite 264, 272
 - conveyor 527
 - counter 276
 - darkroom 278
 - darkroom revolving 278
 - demolition 260
 - double 265
 - double acting swing 282
 - duct access 523
 - dutch 270
 - dutch oven 381
 - electric automatic closer 297
 - electro magnetic closer 297
 - entrance 261, 270, 273, 283
 - entrance strip 281
 - exterior 272
 - exterior pre-hung 273
 - fiberglass 272, 280
 - fire 266, 269, 276, 591
 - fire rated access 274
 - fireplace 381
 - flexible 282
 - floor 275
 - flush 267, 270
 - flush wood 267
 - folding 376
 - folding accordion 271
 - frame 262, 263
 - frame exterior wood 213
 - frame grout 98
 - frame interior 213
 - frame lead lined 458
 - french exterior 272
 - garage 280
 - glass 261, 275, 283
 - hand carved 266
 - handle 426
 - hangar 278, 456
 - hardware 296
 - hardware accessory 301
 - hollow metal 263
 - hollow metal exterior 265
 - industrial 276
 - interior pre-hung 273
 - jamb molding 207
 - kennel 275
 - kick plate 303
 - knob 299
 - labeled 264, 268
 - louver 311
 - louvered 271, 273
 - mahogany 266
 - manufact. hrdwd. casework ... 426
 - metal 261, 265, 280, 453
 - metal access 274
 - metal faced wood 269
 - metal fire 264
 - metal toilet component 370
 - mirror 309
 - molding 207
 - moulded 270
 - opener 260, 277, 281, 296
 - operator 260, 296, 297
 - overhead 280, 281
 - overhead commercial 280
 - panel 270
 - paneled 265
 - partition 375
 - passage 271, 273
 - patio 275
 - plastic laminate 267
 - plastic laminate casework 424
 - plastic-laminate toilet 371
 - prefinished 267
 - pre-hung 272, 273
 - prison 279
 - protector 296
 - pull 301
 - refrigerator 277
 - release 587
 - removal 260
 - residential 213, 265, 270
 - residential garage 280
 - residential steel 265
 - residential storm 261
 - revolving 278, 284, 449
 - revolving entrance 283
 - rolling 276, 285
 - roof 253
 - rosewood 266
 - sauna 447
 - seal 395
 - sectional 280
 - sectional overhead 280
 - security vault 279
 - shower 373
 - sidelight 265, 272
 - sill 207, 213, 301
 - sliding 266
 - sliding aluminum 275
 - sliding entrance 283
 - sliding glass 275
 - sliding glass vinyl-clad 275
 - sliding panel 285
 - sliding vinyl-clad 275
 - special 274, 279
 - stain 354
 - stainless steel 273
 - stainless steel (access) 274
 - steel .. 263-265, 279, 280, 453, 833
 - steel ballistic 278
 - steel detention 279
 - steel louver 311
 - steel sliding 266
 - stop 283, 300
 - storm 261
 - swinging glass 283
 - switch burglar alarm 590
 - telescoping 281
 - threshold 214
 - tin clad 269
 - traffic 281
 - varnish 354
 - vault 279
 - vertical lift 281
 - weatherstrip 305
 - weatherstrip garage 305
 - wire partition 374
 - wood 266, 267, 269
 - wood ballistic 278
 - wood double acting swing ... 282
 - wood fire 268
 - wood panel 270
 - wood storm 273
 - Doorbell system 574
 - Dormer gable 187
 - Dormitory furniture 434
 - Double acting swing door 282
 - hung aluminum sash window .. 286
 - hung bay wood window 290
 - hung steel sash window 287
 - hung window 291
 - hung wood window 288
 - precast concrete tee beam .. 85
 - wall pipe 665
 - weight hinge 302
 - Dovetail anchor 67
 - Dowel cap 72
 - reinforcing 72
 - sleeve 72
 - Downspout 248, 249, 387
 - aluminum 248
 - copper 248
 - demolition 220
 - elbow 249
 - lead coated copper 249
 - steel 249
 - strainer 248
 - Dozer 694
 - backfill 608
 - excavation 604
 - Draft inducer breeching 532
 - Draft-induction fan 532
 - Dragline 603, 676
 - bucket 693
 - Drain 494, 497
 - board 223
 - deck 495
 - dome 497
 - facility trench 497
 - floor 495
 - main 497
 - pipe 607
 - roof 497
 - sanitary 495
 - scupper 497
 - sediment bucket 495
 - shower 494
 - trench 497
 - Drainage accessory 249
 - field 660
 - pipe 510, 659, 661
 - trap 494
 - Drapery hardware 422
 - Drawer front plastic laminate ... 424
 - front wood 426
 - kitchen 424
 - track 426
 - type cabinet 427
 - wood 426
 - Dredge 676
 - hydraulic 676
 - Dressing unit 434
 - Drill auger 29
 - console dental 417
 - core 15, 692
 - earth 28, 626
 - hole 620
 - quarry 696
 - rig 28
 - rig mobilization 595
 - rock 28, 602
 - shop 410
 - steel 696
 - track 695
 - wood 172, 643
 - Drilled concrete pier and shaft .. 627
 - concrete pier uncased 628
 - pier 627
 - Drilling and blasting bulk 602
 - and blasting rock 602
 - concrete 91
 - concrete impact 91
 - horizontal 654
 - plaster 318
 - quarry 602
 - rig 692

- rock bolt 602
steel 122
Drinking bubbler 508
fountain 508, 509
fountain deck rough-in 509
fountain floor rough-in 508
fountain handicap 508
fountain support 505
fountain wall rough-in 508
Drip edge 252
edge aluminum 252
Dripproof motor 583
Driven pile 624
Driver post 699
sheeting 696
Drive-up window 397
Driveway 630
gate security 278
removal 29
security gate 278
security gate opener 279
security gate solar panel 279
Drop pan ceiling 332
Drum trap copper 494
Dry cleaning equipment 398
fall painting 360
pipe sprinkler head 474
wall leaded 458
Drycleaner 398
Dryer commercial clothes 399
darkroom 400
hand 378
industrial 398
receptacle 564
residential 402
vent 402
Dry-pipe sprinkler system 474
Dry-type transformer 568
Drywall 324
accessory 328
column 324
cutout 32
demolition 314, 315
finish 837
frame 262
gypsum 324
gypsum high abuse 327
high abuse 327
nail 171
painting 358, 359
partition 317
partition NLB 316
prefinished 325
removal 315
screw 328
Duck tarpaulin 22
Duct accessory 523
connection fabric flexible 522
electric 559, 571
electrical underfloor 560
fitting trench 560
fitting underfloor 560
flexible 524
flexible insulated 524
flexible noninsulated 524
furnace 535
grille 344
heater electric 543
humidifier 548
HVAC 522
insulation 514
liner 524
liner non-fibrous 525
mechanical 522
silencer 523
steel trench 560
thermal insulation 514
trench 559
underfloor 560
underground 667
utility 667
Ductile iron fitting 655
iron fitting mech joint 656
iron grooved joint 488
iron pipe 655
Ductwork 522, 844
aluminum 522
demolition 512
fabric coated flexible 524
fabricated 521
fiberglass 522
galvanized 522
laboratory 409
metal 521
rectangular 521
rigid 522
Dumbbell 412
waterstop 62
Dumbwaiter electric 462
manual 462
Dump charge 34
truck 695
Dumpster 33, 803
Dumptruck offhighway 695
Duplex receptacle 574
Dust barrier 23
collection system 682
collector shop 410
Dustproofing 81
compound 50
Dutch door 270
oven door 381
DWV pipe ABS 489
PVC pipe 489, 659
tubing copper 486
- ## E
- Earth auger 692
compactor 693
drill 28, 626
rolling 619
scraper 694
vibrator 599, 608, 619
Earthwork 597
equipment 608
equipment rental 692
haul 609
Eave overhang 453
Ecclesiastical equipment 419
Echo chamber 457
Economy brick 102
Edge drip 252
Edger concrete floor 692
Edging 650
aluminum 650
curb 129, 636
Educational casework 427
T.V. studio 591
Efficiency flush valve high 505
Efflorescence testing 15
Effluent-filter septic system 660
Eggrate ceiling 332
EIFS 229
Ejector pump 496
Elastomeric coating 361
liquid flooring 341
roof 244
sheet waterproofing 223
waterproofing 223
Elbow downspout 249
pipe 488
Electric appliances 400
backstop 413
ballast 578
baseboard heater 547
boiler 533
cabinet 573
cable 552, 553
capacitor 576
chalkboard 365
commercial water heater 499
duct 559, 571
duct heater 543
dumbwaiter 462
feeder 571
fixture 577
fixture exterior 581
furnace 535
generator 696
heater 402
heating 547
hinge 302
hoist 679
lamp 582
log 380
metallic tubing 557
meter 566
motor 583
panelboard 570
pool heater 534
service 574
stair 403
switch 573, 574
traction freight elevator 462
utility 667
vehicle charging 575
water cooler 509
water heater residential 498
Elec. & telephone underground 667
box 558
cable 555
conduit 556
demolition 550
fee 10
laboratory 410
metering smart 567
pole 666
tubing 556
wire 554
Electricity temporary 16
Electronic air cleaner 532
closer 297
control system 515
directory board 367
markerboard 366
Electrostatic painting 358
Elevated conduit 557
floor 75
installation add 478
pipe add 478
slab 75
slab formwork 54
slab reinforcing 71
water storage tank 658
water tank 658
Elevating scraper 605
Elevator 462, 841
cab finish 464
control 465
electric traction freight 462
fee 10
freight 462
hydraulic freight 463
hydraulic passenger 464
option 465
passenger 462
residential 463
shaft wall 316
Embossed print door 270
Emergency call system 587
equipment laboratory 410
eyewash 507
lighting 579
lighting unit 579
shower 507
Employer liability 12
EMT 557
Emulsion adhesive 338
asphaltic 646
pavement 630
penetration 631
sprayer 696
Encapsulation asbestos 44
pipe 44
Encasement pile 625
Encasing steel beam formwork 52
Enclosed bus assembly 571
Enclosure acoustical 456, 457
bathtub 374
commercial telephone 369
decontamination 41, 43, 46
shower 373
swimming pool 451
telephone 369
End culvert 662
grain block floor 335
Endwall overhang 453
Energy circulator air solar 536
saving lighting device 567
system controller solar 537
system heat exchanger solar 537
Engineer brick 102
Engineered stone countertop 430
Engineering fee 10, 792
Engraved panel signage 368
Entrance aluminum 284
and storefront 283
automatic sliding 283
canopy 387, 453
door 261, 270, 273, 283
door aluminum-framed 284
door fibrous glass 272
floor mat 431
frame 213
lock 301
screen 370
strip 281
Entry canopy 386
EPDM adhesive 223
flashing 247
roofing 243
Epoxy anchor 89, 121
coated reinforcing 72
coating 81, 361, 654
fiberglass wound pipe 510
floor 341, 342
grating 216
grout 329, 330, 622
lined silo 457
terrazzo 341
wall coating 361
welded wire 73
Equipment 398, 692
athletic 412
automotive 394
bank 397
barber 398
basketball 413
cell 397
cinema 408
cleaning & disposal 407
clock 587

darkroom	400	machine	608	fire	382, 474	laundry	503
demolition	392	planting pit	647	installation	383	lavatory	503
dental	417	scraper	605	portable ABC	382	Fee architectural	10
dental office	417	septic tank	660	pressurized fire	383	engineering	10
detention	279, 397	structural	602	standard	382	Feeder electric	571
dry cleaning	398	tractor	599	wheeled ABC	383	section branch circuit	569
earthwork	608	trench	598, 601	Extra work	13	section circuit breaker	569
ecclesiastical	419	Excavator bucket	699	Extruder curb	693	section frame	569
exercise	412	hydraulic	692	Extrusion aluminum	135	section switchboard	569
fire hose	473	Exchanger heat	537	Eye bolt screw	69	Feller buncher	693
fire-extinguishing	474	Exercise equipment	412	wash fountain	507	Felt	241
food preparation	405	ladder	412	wash portable	508	asphalt	240, 241
foundation formwork	55	rope	412	Eye/face wash safety equipment	508	carpet pad	342
gymnasium	412, 413	weight	412	Eyewash emergency	507	tarred	241
health club	412	Exhaust hood	401, 409	safety equipment	507	waterproofing	222
hospital	415	vent	530			Fence	350
ice skating	445	Exhauster roof	526			aluminum	639, 640
installation	393	Exhibit case	427			and gate	639
insulation	515	Exit control alarm	590			board batten	642
insurance	12	device	298			cedar	642
jail	279	light	579			chain link	24, 641
laboratory	409, 427	lighting	579			chain link industrial	639
laboratory emergency	410	Expansion anchor	121			chain link residential	639
laundry	398, 399	joint	63, 251, 321, 518			decorative	641
loading dock	395	joint assembly	258			helical topping	641
lube	394	joint bellows	518			mesh	639
lubrication	394	joint butyl	251			metal	639
medical	415, 416, 418	joint floor	258			misc metal	641
medical sterilizing	415	joint neoprene	251			picket point	350
mobilization	22, 627	joint roof	251			plywood	24
pad	76	shield	121			security	641
parking	394	tank	519			snow	39
parking collection	394	tank steel	518			steel	639, 641
parking control	394	Expense office	13			temporary	24
parking gate	394	Explosionproof fixture	580			tennis court	640
parking ticket	394	lighting	580			treated pine	642
playfield	414	Explosive	603			tubular	641
playground	414, 640	detection equipment	590			wire	24, 641
prison	279	detector	590			wood rail	642
refrigerated storage	403	Explosive/implosive demolition	31			Fencing demolition	30
refrigeration	445	Exposed aggregate	81, 630			wire	641
rental	692, 802	aggregate coating	361			Fertilizer	647
rental concrete	692	Extension backhoe	699			Fiber cement siding	239
rental earthwork	692	ladder	697			optic cable	586
rental general	695	Exterior blind	214			reinforcing concrete	78
rental highway	699	concrete block	107			steel	74
rental lifting	700	door	272			synthetic	74
rental marine	702	door frame	213			Fiberboard insulation	228
rental wellpoint	701	door hollow metal	265			Fiberglass angle	215
safety eye/face	508	fixture lighting	581			area wall cap	388
security and vault	396	floodlamp	582			bench	437
shop	410	insulation	229			blown-in	227
stage	411	insulation finish system	229			casting	215
swimming pool	444	LED fixture	581			ceiling board	331
theater and stage	411	lighting fixture	581			cooling tower	540
waste handling	418	molding	200			cross	420
Erosion control synthetic	619	moulding astragal	304			door	272, 280
Escalator	466, 842	paint door & window	352			ductwork	522
Escape fire	154	plaster	323			flagpole	389
Estimate electrical heating	547	pre-hung door	273			flat sheet	215
Estimates window	833	PVC molding	217			floor grating	216
Estimating	789	residential door	270			formboard	59
Evergreen shrub	648	roll-up shutter	386			grating	216
tree	648	shutter	214			handrail	215
Exam equipment medical	416	siding painting	351			insulation	224, 225, 227, 453, 514
Excavating bulk bank measure	603	signage	368			panel	23, 235, 347
bulk dozer	604	sprinkler	645			panel skylight	454
equipment	851	steel coating	362			planter	437
trench	598	surface preparation	347			reinforced ceiling	446
utility trench	601	tile	329			reinforced plastic panel	345
Excavation	598, 603, 850	trim	200			round bar	215
boulder	603	trim paint	353			round tube	215
bulk scraper	605	wood door frame	213			shade	424
cofferdam	604	wood frame	213			single hung window	295
dozer	604	Extinguisher cart mounted	383			square bar	215
hand	599, 601, 602, 608	chemical dry	382			square tube	215

F

Fabric awning	386	laundry	503
flashing	246	lavatory	503
pillow water tank	658	Fee architectural	10
stabilization	631	engineering	10
stile	304	Feeder electric	571
structure	449	section branch circuit	569
waterproofing	222	section circuit breaker	569
welded wire	73	section frame	569
wire	641	section switchboard	569
Fabricated ductwork	521	Feller buncher	693
Fabric-backed flashing	247	Felt	241
Face brick	102, 823	asphalt	240, 241
brick cleaning	822	carpet pad	342
wash fountain	507	tarred	241
Faceted glass	307	waterproofing	222
Facial scanner unit	306	Fence	350
Facility trench drain	497	aluminum	639, 640
Facing panel	115	and gate	639
stone	113	board batten	642
tile structural	103	cedar	642
Fall painting dry	360	chain link	24, 641
Fan air conditioning	525	chain link industrial	639
air handling	525	chain link residential	639
axial flow	525	decorative	641
bathroom exhaust	527	helical topping	641
booster	525	mesh	639
ceiling	525	metal	639
centrifugal type HVAC	525	misc metal	641
coil air conditioning	544	picket point	350
draft-induction	532	plywood	24
HVAC axial flow	525	security	641
induced draft	532	snow	39
in-line	525	steel	639, 641
kitchen exhaust	527	temporary	24
low sound	525	tennis court	640
paddle	565	treated pine	642
propeller exhaust	527	tubular	641
residential	565	wire	24, 641
roof	526	wood rail	642
utility set	525, 526	Fencing demolition	30
vaneaxial	525	wire	641
ventilation	565	Fertilizer	647
ventilator	525	Fiber cement siding	239
wall	527	optic cable	586
wall exhaust	526	reinforcing concrete	78
wiring	565	steel	74
Farm type siding	236	synthetic	74
Fascia board demolition	167	Fiberboard insulation	228
metal	248	Fiberglass angle	215
PVC	217	area wall cap	388
wood	186, 203	bench	437
Fast food equipment	405	blown-in	227
Fastener timber	171	casting	215
wood	171	ceiling board	331
Fastening alternative	229	cooling tower	540
Faucet & fitting	503, 505	cross	420
bathroom	503	door	272, 280

- stair tread 215
 steeple 388
 tank 516
 threaded rod 215
 trash receptacle 437
 trench drain 497
 wall lamination 362
 waterproofing 222
 wide flange beam 215
 window 295
 wool 226
 Field disposal 660
 drainage 660
 mix concrete 817
 office 17
 office expense 17
 personnel 12
 sample 47
 seeding 648
 Fieldstone 112
 Fill 608, 609
 by borrow 609
 by borrow & utility bedding 609
 floor 76
 gravel 594, 609
 Filler block 359
 cabinet 425
 crack 699
 joint 256
 strip 304
 Fillet welding 123
 Film equipment 400, 408
 polyethylene 647
 security 310
 Filter air 532
 grille 529
 mechanical media 531
 stone 620
 swimming pool 509
 Filtration air 40
 equipment 444
 Fin tube radiation 545
 Fine grade 647
 Finish carpentry 424
 concrete 633
 floor 336, 360
 grading 598
 Keene cement 322
 lime 97
 nail 171
 refrigeration 446
 wall 344
 Finishing floor concrete 80
 wall concrete 81
 Fir column 212
 floor 336
 molding 206
 roof deck 190
 roof plank 190
 Fire & heat detector 591
 alarm 591
 alarm panel and device 591
 brick 116
 call pullbox 591
 clay 116
 damper curtain type 523
 door 266, 269, 276, 591
 door frame 262
 door metal 264
 door wood 268
 equipment cabinet 382
 escape 154
 escape balcony 154
 escape stair 155
 extinguisher 382, 474
 extinguisher portable 382
 extinguishing system 474
 horn 591
 hose 473
 hose adapter 473
 hose equipment 473
 hose nozzle 473
 hose rack 473
 hose storage cabinet 382
 hose valve 473
 hydrant 657
 hydrant building 472
 panel 591
 protection 382
 pump 475
 rated tile 103
 resistant drywall 325, 326
 resistant glass 307
 resistant wall 317
 retardant pipe 510
 signal bell 591
 Firebrick 116
 Fire-department connection 472
 Fire-extinguishing equipment 474
 Fireplace accessory 380
 box 116
 built-in 380
 chimney 380
 damper 381
 demolition 96
 door 381
 form 380
 free standing 380
 mantel 212
 mantel beam 212
 masonry 116
 prefabricated 380
 Fireproofing 254
 plaster 254
 plastic 254
 sprayed cementitious 254
 Firestop wood 183
 Firestopping 254, 832
 Fire-suppression automatic 474
 Fitting bus-duct 571
 ductile iron 655
 grooved-joint 487
 grooved-joint pipe 488
 poke-thru 557
 PVC 656
 underfloor duct 560
 waterstop 63
 Fixed blade louver 530
 booth 433
 chalkboard 364
 end caisson pile 626
 roof tank 517
 tackboard 366
 vehicle delineator 672
 Fixture ballast 578
 bathroom 500-502
 carrier/support 505
 electric 577
 explosionproof 580
 fluorescent 577
 incandescent 578
 incandescent vaportight 578
 interior light 577
 plumbing 496, 500, 508, 520, 659
 removal 479
 residential 564
 sodium high pressure 582
 support handicap 506
 vandalproof 578
 Flagging 335, 635
 slate 635
 Flagpole 388
 aluminum 388
 fiberglass 389
 foundation 389
 steel internal halyard 389
 structure mounted 389
 wall 389
 wood 389
 Flange beam fiberglass wide 215
 Flanged coil 543
 Flasher barrels 696
 barricade 696
 Flashing 246-248
 aluminum 236, 246, 495
 asphalt 246
 butyl 247
 cement 220
 copper 246, 247, 495
 counter 251
 demolition 42
 EPDM 247
 fabric 246
 fabric-backed 247
 laminated sheet 247
 masonry 246
 mastic-backed 247
 membrane 241
 metal 453
 neoprene 247
 paperbacked 247
 plastic sheet 247
 PVC 247
 sheet metal 246
 stainless 246
 valley 231
 vent 495
 Flat seam sheet metal roofing 245
 sheet fiberglass 215
 Flatbed truck 695, 698
 truck crane 700
 Flexible conduit & fitting 561
 connector 491
 door 282
 duct 524
 duct connection fabric 522
 ductwork fabric coated 524
 insulated duct 524
 metal hose 491
 noninsulated duct 524
 plastic netting 389
 sign 368
 Float finish concrete 80, 81
 glass 307
 Floater equipment 12
 Floating dock 676
 floor 334
 pin 301
 roof tank 517
 wood pier 676
 Flood coating 241
 Floodlamp exterior 582
 Floodlight LED 582
 pole mounted 582
 trailer 696
 tripod 696
 Floor 335
 abrasive 80
 access 344
 acid proof 335
 acrylic 341
 adhesive removal 82
 asphalt block 634
 brick 335, 634
 carpet 343
 ceramic tile 329
 check 301
 cleaning 25
 cleanout 483
 closer 297
 color 81
 composition 342
 concrete finishing 80
 conductive 339, 341
 cork 338
 decking 141-143
 door 275
 door commercial 274
 drain 495
 elevated 75
 end grain block 335
 epoxy 341, 342
 expansion joint 258
 fill 76
 fill lightweight 76
 finish 360
 flagging 635
 framing removal 32
 grating 216
 grating aluminum 157
 grating fiberglass 216
 grating steel 157
 grinding 82
 hardener 50
 hatch 275
 heating radiant 546
 honing 82
 insulation 224
 marble 114
 mastic 341
 mat 431
 mat entrance 431
 nail 171
 neoprene 341
 oak 336
 paint 357
 paint & coating interior 357
 paint removal 82
 parquet 336
 pedestal 344
 plank 189
 plate stair 154
 plywood 190
 polyacrylate 341
 polyester 342
 polyethylene 343
 polyurethane 341, 342
 portable 411
 quarry tile 330
 refrigeration 446
 register 529
 removal 31
 resilient 338
 rubber 338, 638
 sander 698
 scupper 497
 sealer 51
 slate 115
 sleeper 186
 stain 357
 subfloor 190
 terrazzo 339, 838
 tile 340
 tile or terrazzo base 340
 tile terrazzo 340
 topping 81, 88
 transition strip 342
 underlayment 191
 varnish 357, 360
 vinyl 339
 vinyl sheet 338
 wood 335, 336
 wood athletic 336
 wood composition 336

- Flooring bamboo 334
 composition 336, 341
 conductive rubber & vinyl 339
 demolition 314
 elastomeric liquid 341
 masonry 335
 miscellaneous brick 335
 quartz 342
Flow meter 520
Flue chimney 116
 chimney metal 532
 liner 101, 116
 prefab metal 532
 screen 380
 tile 116
Fluid applied membrane
air barrier 230
 heat transfer 537
Fluorescent fixture 577
Fluoroscopy room 458
Flush automatic 505
 bolt 296
 door 267, 270
 HET 505
 metal door 265
 tube framing 282
 valve 505
 wood door 267
Flying truss shoring 61
FM200 fire extinguisher 475
Foam board insulation 224
 core DWV ABS pipe 489
 insulation 227
 pipe covering 485
 roofing 244
 spray rig 696
Foamed coated roofing 244
 in place insulation 226
Foam-water system component 474
Fog seal 630
Foil aluminum 227, 230, 347
 metallic 227
Folder laundry 398
Folding accordion door 271
 accordion partition 376
 bench 436
 door 376
 door shower 373
 gate 374
 table 433
Food delivery cart 405
 dispensing equipment 406
 mixer 405
 preparation equipment 405
 service equipment 406
 storage metal shelving 404
 warmer 406
Foot valve 482
Football goalpost 415
 scoreboard 413
Footing concrete placement 79
 formwork continuous 55
 formwork spread 56
 keyway 55
 keyway formwork 55
 reinforcing 71
 removal 31
 spread 76
Forced-draft cooling tower 540
Forest stewardship council 180
Forged valve 513
Forklift 696
 crew 18
Form deck edge 143
 decking 142
 fireplace 380
 liner concrete 58
 material 806
 release agent 51
Formblock 106
Formboard fiberglass 59
 roof deck 59
 wood fiber 59
Forms 807
 concrete 807
Formwork beam and girder 52
 beam bottom 52
 beam side 53
 box culvert 54
 column 53
 column accessory 60
 column plywood 53
 column round fiber tube 53
 column round fiberglass 53
 column round steel 53
 column steel framed 54
 continuous footing 55
 elevated slab 54
 encasing steel beam 52
 equipment foundation 55
 footing keyway 55
 gang wall 58
 gas station 56
 gas station island 56
 girder 52
 grade beam 56
 hanger accessory 60
 insert concrete 67
 insulating concrete 59
 interior beam 52
 labor hours 808
 light base 56
 mat foundation 56
 oil 62
 patch 62
 pile cap 55
 plywood 52, 54
 radial wall 57
 retaining wall 58
 shoring concrete 61
 side beam 53
 sign base 56
 slab blockout 57
 slab box out opening 55
 slab bulkhead 55, 56
 slab curb 55, 56
 slab edge 55, 56
 slab flat plate 54
 slab haunch 76
 slab joist dome 54
 slab joist pan 54
 slab on grade 56
 slab screed 57
 slab thickened edge 76
 slab trench 57
 slab turndown 76
 slab void 55, 57
 slab with drop panel 54
 sleeve 61
 snap-tie 61
 spandrel beam 52
 spread footing 56
 stair 59
 stake 62
 steel framed plywood 58
 upstanding beam 53
 wall 57
 wall accessory 62
 wall boxout 57
 wall brick shelf 57
 wall bulkhead 57
 wall buttress 57
 wall corbel 57
 wall lintel 58
 wall pilaster 58
 wall plywood 57
 wall prefab plywood 58
 wall sill 58
 wall steel framed 58
Foundation caisson 626
 chimney 75
 concrete block 107
 flagpole 389
 mat 76
 mat concrete placement 79
 pile 628
 scale pit 390
 underpin 622
 vent 99
 wall 107
Fountain drinking 508, 509
 eye wash 507
 face wash 507
 lighting 510
 nozzle 510
 pump 509
 wash 505
 water pump 509
Frame baked enamel 263
 door 262, 263
 drywall 262
 entrance 213
 exterior wood door 213
 fire door 262
 grating 158
 labeled 262
 metal 262
 metal butt 262
 scaffold 19
 shoring 61
 steel 262
 trench grating 159
 welded 262
 window 289
 wood 425
Framing aluminum 135
 anchor 172
 band joist 148
 beam & girder 181
 boxed header/beam 148
 bracing 151
 bridging 151
 canopy 127
 ceiling 182
 column 182
 deck 184
 demolition 167
 heavy 189
 joist 182
 laminated 193
 lightweight 129
 lightweight angle 129
 lightweight channel 129
 lightweight junior beam 130
 lightweight tee 130
 lightweight zee 130
 load-bearing stud partition 145
 load-bearing stud wall 145
 metal joist 149
 metal roof parapet 151
 miscellaneous wood 183
 NLB partition 318
 open web joist wood 182
 opening 453
 pipe support 131
 porch 184
 removal 166
 roof metal rafter 151
 roof metal truss 153
 roof rafter 185
 roof soffit 152
 roof truss 193
 sill & ledger 186
 sleeper 186
 slotted channel 130
 soffit & canopy 186
 stair stringer 183
 steel 133
 suspended ceiling 182
 timber 189
 treated lumber 187
 tube 282
 wall 187
 web stiffener 149
 window 453
 window wall 282
 wood 180-183, 186, 187, 189
 wood plate 187
Freestanding chalkboard 366
Freeze deep 401
Freezer 403, 446
Freight elevator 462
 elevator hydraulic 463
 elevators 841
French exterior door 272
Friction pile 625, 628
Frieze PVC 217
Front end loader 603
 plastic laminate drawer 424
 vault 279
FRP panel 345
Fryer 406
Fuel storage tank 517
 tank 516
Full vision glass 308
Fume hood 409
Furnace duct 535
 electric 535
 gas 535
 gas-fired 535
 hot air 535
 oil-fired 535
 wall 536
Furnishing library 434
 site 437
Furniture 431
 dormitory 434
 hospital 435
 hotel 433
 library 435
 office 432
 restaurant 433
 school 434
Furring and lathing 318
 ceiling 188, 318, 320
 channel 318, 328
 concrete 187
 masonry 187
 metal 318
 steel 318
 wall 187, 318
 wood 187
Fusible link closer 297
 switch branch circuit 569
Fusion machine butt 696

G

- Gabion box 620
 retaining wall stone 644
Gable dormer 187
Galley septic 660
Galvanized ductwork 522

- plank grating 158
 reinforcing 72
 roof 231
 steel reglet 251
 welded wire 73
 Galvanizing 362
 lintel 130
 metal in field 362
 metal in shop 120
 Gang wall formwork 58
 Gantry crane 679
 Garage 455
 door 280
 door residential 280
 door weatherstrip 305
 public parking 455
 residential 455
 Garbage disposal 401, 408
 Garden house 455
 house demo 440
 Gas cock 479
 connector 491
 fired boiler 533
 fired furnace 535
 fired infrared heater 544
 fired space heater 535
 furnace 535
 generator 575
 generator set 575
 heat air conditioner 541
 incinerator 418
 log 380
 pipe 665
 station formwork 56
 station island formwork 56
 station tank 516
 stop valve 479
 vent 532
 water heater commercial 499
 water heater instantaneous 499
 water heater residential 499
 water heater tankless 499
 Gas-fired duct heater 535
 Gasket joint 256
 neoprene 256
 Gas oil combination boiler 533
 Gasoline generator 575
 piping 665
 tank 517
 Gate chain link 640
 day 279
 fence 639
 folding 374
 opener driveway security 279
 parking 394
 security 375
 security driveway 278
 slide 639
 swing 639
 valve 512, 513
 valve soldered 480
 Gauging plaster 322
 General air conditioner 512
 boiler 478
 contractor's overhead 795
 equipment rental 695
 fill 609
 Generator diesel 575
 diesel-engine-driven 575
 electric 696
 emergency 575
 gas 575
 gasoline 575
 jet 575
 steam 115
 Geodesic dome 455
 dome demo 440
 hemisphere greenhouse 451
 Geo-grid 643
 GFI receptacle 563
 Girder formwork 52
 reinforcing 71
 wood 181, 189
 Girt steel 134
 Glass 307, 309, 310
 acoustical 311
 and glazing 311
 bead 282
 bevel 307
 block 110
 bulletin board 366
 bulletproof 311
 column cover 307
 curtain wall 285
 demolition 260
 door 261, 275, 283
 door astragal 304
 door shower 373
 door sliding 275
 door swinging 283
 faceted 307
 fiber rod reinforcing 72
 fire resistant 307
 float 307
 full vision 308
 heat reflective 308
 insulating 308
 laminated 311
 lead 458
 lined water heater 402
 low emissivity 307
 mirror 309, 379
 mosaic 330
 mosaic sheet 331
 obscure 308
 patterned 308
 pipe 510
 reduce heat transfer 308
 reflective 309
 safety 308
 sandblast 307
 sheet 309
 shower stall 373
 solar film 310
 spandrel 309
 tempered 307
 tile 309
 tinted 307
 window 309
 window wall 283
 wire 309
 Glassware sterilizer 410
 washer 410
 Glaze coat 358
 Glazed aluminum curtain wall 285
 block 110
 brick 102
 ceramic tile 328
 concrete block 109
 wall coating 361
 Glazing 307
 application 308
 plastic 310
 polycarbonate 310
 productivity 835
 Globe valve 513
 valve bronze 481
 Glove bag 42
 box 409
 Glued laminated 193
 Goalpost 415
 football 415
 soccer 415
 Golf shelter 414
 tee surface 343
 Gore line 637
 Grab bar 378
 Gradall 603, 693
 Grade beam concrete placement 79
 beam formwork 56
 fine 647
 Grader motorized 693
 Grading 597, 615
 rough 597
 site 597
 Graffiti resistant treatment 360
 Grandstand 451
 Granite 112
 building 112
 chip 647
 conductive floor 341
 countertop 429
 curb 113, 636
 demolition 96
 indian 636
 paver 113
 paving block 635
 sidewalk 635
 Granolithic finish concrete 88
 Grass cloth wallpaper 345
 lawn 647
 seed 648
 surfacing artificial 638
 Grating aluminum 156
 aluminum floor 157
 aluminum mesh 157
 aluminum plank 157
 area wall 388
 area way 388
 fiberglass 216
 fiberglass floor 216
 floor 216
 frame 158
 galvanized plank 158
 plank 158
 stainless bar 158
 stainless plank 158
 stair 154
 steel 157
 steel floor 157
 steel mesh 158
 Gravel base 631
 fill 594, 609
 pack well 659
 pea 647
 roof 51
 stop 248
 Gravity retaining wall 642
 Grease interceptor 495
 trap 495
 Green roof membrane 234
 roof soil mixture 233
 roof system 233
 Greenhouse 450
 air supported 449
 commercial 450
 cooling 450
 demo 440
 geodesic hemisphere 451
 residential 450
 Grid spike 172
 Griddle 406
 Grill coiling 276
 Grille air return 529
 aluminum 529
 decorative wood 212
 duct 344
 filter 529
 painting 357
 plastic 529
 side coiling 276
 top coiling 276
 window 292
 Grinder concrete floor 692
 shop 410
 system pump 496
 Grinding concrete 82
 floor 82
 Grooved block 106
 joint ductile iron 488
 joint fitting 487
 joint pipe 487
 Ground 188
 box hydrant 493
 clamp water pipe 556
 cover plant 648
 face block 106
 fault protection 566
 rod 556
 socket 414
 water monitoring 16
 wire 556
 Grounding 556
 & conductor 551-554
 wire brazed 556
 Group shower 504
 wash fountain 505
 Grout 98
 cavity wall 98
 cement 98, 622
 concrete 98
 concrete block 98
 door frame 98
 epoxy 329, 330, 622
 metallic non-shrink 88
 non-metallic non-shrink 88
 pump 698
 tile 328
 topping 88
 wall 98
 Grouted bar 73
 strand 73
 Guard corner 377
 gutter 251
 house 455
 lamp 582
 service 24
 snow 253
 wall 377, 378
 wall & corner 377
 window 162
 Guardrail scaffold 19
 temporary 23
 Guide rail 672
 rail cable 672
 rail removal 29
 rail timber 672
 rail vehicle 672
 Guide/guard rail 672
 Gunite 83
 drymix 83
 mesh 83
 Gutter 250, 453
 aluminum 249
 copper 250
 demolition 220
 guard 251
 lead coated copper 250
 monolithic 635
 stainless 250
 steel 250
 strainer 251
 valley 453
 vinyl 250

wood	250	Handrail	378	therapy	416	Historical Cost Index	11
Gutting	34	aluminum	344	transfer fluid	537	Hockey dasher	445
demolition	34	fiberglass	215	transfer package	500	scoreboard	413
Guyed derrick crane	701	wood	206, 211	Heated pad	52	Hoist	678
tower	667	Hangar	456	Heater & fan bathroom	527	chain	679
Gym floor underlayment	337	demo	440	electric	402	chain fall	701
mat	413	door	278	floor mounted space	535	electric	679
Gymnasium divider curtain	413	Hanger accessory formwork	60	gas fired infrared	544	overhead	679
equipment	412, 413	beam	172	gas residential water	499	personnel	701
floor	336, 343	joist	172	gas water	499	tower	701
squash court	448	Hanging lintel	130	gas-fired duct	535	Holder closer	297
Gypsum block demolition	32	wire	333	infrared	544	screed	69
board	324	Hardboard cabinet	424	oil-fired space	535	Holding tank	686
board accessory	328	molding	208	sauna	447	Holdown	172
board high abuse	327	overhead door	280	space	697	Hole drill	620
board leaded	458	paneling	208	swimming pool	534	Hollow core door	267, 271
board partition	317	tempered	208	terminal	544	metal door	263
board partition NLB	317	underlayment	191	Heater, tubular infrared	544	metal frame	262
board removal	315	Hardener concrete	81	Heater unit	536, 544	metal stud partition	321
board system	316	floor	50	warm air	535	precast concrete plank	84
drywall	324	Hardware	296	water	402, 566	wall anchor	121
fabric wallcovering	345	apartment	296	water residential electric	498	Honed block	107
high abuse drywall	327	cabinet	426	Heating	485, 533-537, 844	Honing floor	82
lath	320	cloth	641	& cooling classroom	544	Hood and ventilation equip.	531
lath nail	171	door	296	control valve	519	exhaust	401, 409
partition	375	drapery	422	electric	547	fume	409
partition NLB	317	finishes	834	estimate electrical	547	range	401
plaster	322	motel/hotel	296	hot air	535, 544	Hook clevis	162
restoration	314	panic	298	hydronic	534, 544	coat	379
roof deck	87	rough	180	insulation	515	robe	379
shaft wall	316	window	296	kettle	700	Hopper refuse	468
sheathing	193	Hardwood carrel	434	subsoil	445	Horizontal borer	699
sound dampening panel	326	floor stage	411	Heavy construction	644	boring	654
underlayment poured	88	grille	212	duty shoring	19	boring machine	692
wallboard repair	314	Harness body	21	framing	189	directional drill	699
weatherproof	193	Harrow disc	693	lifting	802	drilling	654
		Hasp	301	rail track	670	Hom fire	591
		Hat and coat strip	379	timber	189	Hose adapter fire	473
		rack	385	Helicopter	701	air	696
		Hatch floor	275	Hemlock column	212	bibb sillcock	503
		roof	253	HET flush	505	braided bronze	491
		smoke	253	Hex bolt steel	123	discharge	697
		Haul earthwork	609	Hexagonal face block	107	equipment	473
		Hauling	609	High abuse drywall	327	fire	473
		cycle	609	build coating	361	metal flexible	491
		Haunch slab	76	chair reinforcing	68	nozzle	473
		Hay	646	efficiency flush valve	505	rack	473
		bale	619	efficiency urinal	505	rack cabinet	382
		Hazardous waste cleanup	40	installation conduit	557	suction	697
		waste containment	38	rib lath	320	valve cabinet	382
		waste disposal	40	rise glazing	308	water	697
		waste handling	419	strength block	107	Hospital cabinet	427
		HDPE	38	strength bolt	124, 824	casework	427
		distribution box	660	strength decorative block	105	door hardware	296
		Head sprinkler	473	strength steel	134, 826	equipment	415
		Header load-bearing stud wall	144	High-security chain link fence	640	furniture	435
		pipe wellpoint	701	Highway equipment rental	699	hinge	302
		wood	187	power	635	kitchen equipment	406
		Header/beam boxed	148	sign	369	partition	374
		Headrail metal toilet component	371	Hinge	301	tip pin	301
		plastic-laminate toilet	371	brass	301	Hot air furnace	535
		Health club equipment	412	cabinet	426	air heating	535, 544
		Hearth	116	continuous	302	water boiler	533, 534
		Heat baseboard	544	electric	302	water dispenser	498
		electric baseboard	547	hospital	302	water heating	533, 544
		exchanger	537	paumelle	302	water-steam exchange	500, 537
		exchanger plate-type	537	prison	302	water-water exchange	537
		exchanger shell-type	537	residential	302	weather concrete	78
		greenhouse	450	school	302	Hotel cabinet	380
		loss	845	security	302	furniture	433
		pump	543	special	302	lockset	298, 299
		pump air-source	542	stainless steel	301	House garden	455
		pump residential	566	steel	301	guard	455
		recovery	418	wide throw	302	telephone	587
		reflective glass	308	Hinges	835	Housewrap	230
		temporary	16, 52	Hip rafter	186	Hubbard tank	416

Humidification equipment . . . 451
 Humidifier . . . 402, 548
 duct . . . 548
 room . . . 548
 Humus peat . . . 646
 HVAC axial flow fan . . . 525
 demolition . . . 512
 duct . . . 522
 equipment insulation . . . 515
 louver . . . 530
 piping specialty . . . 518, 520
 power circulator & ventilator . . . 526
 Hydrant building fire . . . 472
 fire . . . 657
 ground box . . . 493
 removal . . . 29
 wall . . . 493
 water . . . 493
 Hydrated lime . . . 97
 Hydraulic chair . . . 417
 crane . . . 679, 700
 dredge . . . 676
 excavator . . . 692
 hammer . . . 693, 697
 jack . . . 701
 jack climbing . . . 701
 jacking . . . 802
 lift . . . 467
 seeding . . . 648
 Hydrodemolition . . . 29
 concrete . . . 29
 Hydromulcher . . . 699
 Hydronic heating . . . 534, 544
 heating control valve . . . 519
 heating convector . . . 545
 Hypalon neoprene roofing . . . 244

I

Ice machine . . . 407
 rink dasher . . . 445
 skating equipment . . . 445
 Icemaker . . . 401, 407
 I-joist wood & composite . . . 193
 Impact barrier . . . 672
 wrench . . . 696
 Implosive demolition . . . 31
 Incandescent fixture . . . 578
 Incinerator gas . . . 418
 municipal . . . 418
 waste . . . 418
 Inclined ramp . . . 467
 Incubator . . . 409
 Index construction cost . . . 11
 Indian granite . . . 636
 Indicating panel burglar alarm . . . 590
 Indirect-fired water chiller . . . 538
 Indoor athletic carpet . . . 343
 Induced draft fan . . . 532
 Industrial address system . . . 586
 chimneys . . . 811
 door . . . 274, 276
 dryer . . . 398
 equipment installation . . . 393
 folding partition . . . 376
 lighting . . . 577
 railing . . . 156
 safety fixture . . . 507
 window . . . 287
 Inert gas . . . 39
 Infrared broiler . . . 406
 detector . . . 590
 heater . . . 544
 heater gas-fired . . . 544
 heater, tubular . . . 544

Inlet curb . . . 636
 In-line fan . . . 525
 Insecticide . . . 619
 Insert concrete formwork . . . 67
 slab lifting . . . 69
 Inspection technician . . . 16
 Installation add elevated . . . 478
 extinguisher . . . 383
 Instantaneous gas water heater . . . 499
 Instrument switchboard . . . 566
 Insulated glass spandrel . . . 309
 panel . . . 229
 precast wall panel . . . 86
 Insulating concrete formwork . . . 59
 glass . . . 308
 sheathing . . . 190
 Insulation . . . 224, 227
 batt . . . 225
 blanket . . . 514
 blower . . . 697
 blown-in . . . 227
 board . . . 224
 boiler . . . 515
 breeching . . . 515
 building . . . 227
 cavity wall . . . 226
 ceiling . . . 224, 227
 cellulose . . . 226
 composite . . . 229
 duct . . . 514
 duct thermal . . . 514
 equipment . . . 515
 exterior . . . 229
 fiberglass . . . 224, 225, 227, 453, 514
 finish system exterior . . . 229
 floor . . . 224
 foam . . . 227
 foamed in place . . . 226
 heating . . . 515
 HVAC equipment . . . 515
 insert concrete block . . . 105
 isocyanurate . . . 224
 loose fill . . . 226
 masonry . . . 227
 mineral fiber . . . 226
 pipe . . . 485
 piping . . . 485
 polystyrene . . . 224, 226, 446
 reflective . . . 227
 refrigeration . . . 446
 removal . . . 42, 221
 rigid . . . 224
 roof . . . 228, 453
 roof deck . . . 228
 shingle . . . 231
 spray . . . 227
 sprayed-on . . . 227
 subsoil . . . 445
 vapor barrier . . . 230
 vermiculite . . . 226
 wall . . . 224, 453
 wall blanket . . . 225
 Insurance . . . 12, 794
 builder risk . . . 12
 equipment . . . 12
 public liability . . . 12
 Intake-exhaust louver . . . 530
 vent . . . 531
 Integral color concrete . . . 50
 topping concrete . . . 88
 waterproofing . . . 52
 waterproofing concrete . . . 51
 Interceptor . . . 495
 grease . . . 495
 hair . . . 496
 metal recovery . . . 496

oil . . . 496
 Intercom . . . 587
 Interior beam formwork . . . 52
 door frame . . . 213
 LED fixture . . . 578
 light fixture . . . 577
 paint door & window . . . 354
 paint wall & ceiling . . . 359
 planter . . . 436
 pre-hung door . . . 273
 residential door . . . 270
 shutter . . . 423
 wood door frame . . . 213
 Interlocking concrete block . . . 107
 precast concrete unit . . . 634
 Intermediate metallic conduit . . . 557
 Interval timer . . . 562
 Intrusion detection . . . 590
 system . . . 590
 Intumescent coating . . . 361
 Invert manhole . . . 663
 Inverted bucket steam trap . . . 519
 Iron alloy mechanical . . .
 joint pipe . . . 510
 body valve . . . 512
 Ironer laundry . . . 399
 Ironing center . . . 380
 Ironspot brick . . . 335
 Irrigation system sprinkler . . . 645
 Isocyanurate insulation . . . 224
 I.V. track system . . . 374

J

Jack cable . . . 701
 hydraulic . . . 701
 ladder . . . 21
 post adjustable . . . 128
 pump . . . 18
 roof . . . 186
 screw . . . 621
 Jackhammer . . . 603, 695
 Jacking . . . 654
 Jail equipment . . . 279
 Jet water system . . . 659
 Jeweler safe . . . 396
 Jib crane . . . 679
 Job condition . . . 11
 Jockey pump fire . . . 475
 Joint assembly expansion . . . 258
 control . . . 63, 99
 expansion . . . 63, 251, 321, 518
 filler . . . 256
 gasket . . . 256
 push-on . . . 655
 reinforcing . . . 99
 roof . . . 252
 sealant replacement . . . 220
 sealer . . . 256, 257
 Tyton . . . 655
 Joister shop . . . 410
 Joist bridging . . . 140
 concrete . . . 75
 connector . . . 172
 deep-longspan . . . 138
 demolition . . . 167
 framing . . . 182
 hanger . . . 172
 longspan . . . 139
 metal framing . . . 149
 open web bar . . . 140
 precast concrete . . . 85
 removal . . . 167
 truss . . . 141
 web stiffener . . . 149

wood . . . 182, 193
 Jumbo brick . . . 102
 Jute mesh . . . 619

K

Kalamein door . . . 269
 Keene cement . . . 322
 Kennel door . . . 275
 fence . . . 641
 Kettle . . . 406
 heating . . . 700
 tar . . . 698, 700
 Key cabinet . . . 306
 keeper . . . 384
 Keyless lock . . . 299
 Keyway footing . . . 55
 Kick plate . . . 303
 plate door . . . 303
 Kiln vocational . . . 410
 King brick . . . 102
 Kiosk . . . 456
 Kitchen appliance . . . 400
 cabinet . . . 424
 equipment . . . 406
 equipment fee . . . 10
 exhaust fan . . . 527
 metal cabinet . . . 428
 sink . . . 501
 sink faucet . . . 503
 sink residential . . . 501
 unit commercial . . . 400
 K-lath . . . 320
 Knob door . . . 299
 Kraft paper . . . 230

L

Labeled door . . . 264, 268
 frame . . . 262
 Labor adjustment factor . . . 478
 formwork . . . 808
 index . . . 11
 modifier . . . 478
 Laboratory analytical service . . . 47
 cabinet . . . 427
 casework metal . . . 427
 countertop . . . 429
 equipment . . . 409, 427
 safety equipment . . . 410
 sink . . . 409, 410
 table . . . 410
 test equipment . . . 409
 Ladder alternating tread . . . 155
 exercise . . . 412
 extension . . . 697
 inclined metal . . . 155
 jack . . . 21
 monkey . . . 414
 rolling . . . 20
 ship . . . 155
 swimming pool . . . 444
 towel . . . 379
 type cable tray . . . 559
 vertical metal . . . 155
 Lag screw . . . 125
 screw shield . . . 121
 Lagging . . . 623
 Lally column . . . 128
 Laminated beam . . . 193
 countertop . . . 428
 epoxy & fiberglass . . . 362
 framing . . . 193
 glass . . . 311

- glued 193
lead 458
roof deck 190
sheet flashing 247
veneer member 194
wood 193
Lamp electric 582
guard 582
LED 582
metal halide 582
post 162, 580
Lampholder 574
Lamphouse 408
Lance concrete 697
Landfill compactor 694
Landing metal pan 154
stair 340
Landscape fee 10
surface 343
Laser level 697
Latch deadlocking 299
set 298, 299
Lateral arm awning retractable 387
Latex caulking 257
underlayment 337
Lath demolition 314
gypsum 320
metal 316, 320
Lath, plaster and gypsum board 836
Lath rib 320
Lathe shop 410
Lattice molding 206
Lauan door 271
Laundry equipment 398, 399
faucet 503
folder 398
ironer 399
presser 399
sink 502
spreader 398
Lava stone 113
Lavatory commercial 504
faucet 503
pedestal type 501
removal 479
residential 501, 504
sink 501
support 505
vanity top 501
wall hung 501
Lawn grass 647
mower 697
seed 648
Lazy susan 425
Leaching field chamber 660
pit 660
Lead barrier 347
caulking 494
coated copper downspout 249
coated copper gutter 250
coated downspout 249
flashing 246
glass 458
gypsum board 444
lined darkroom 447
lined door frame 458
paint encapsulation 44
paint remediation 44
paint remediation methods 805
paint removal 45
plastic 458
roof 245
salvage 479
screw anchor 122
sheet 458
shielding 458
testing 44
Leads pile 693
Leak detection 592
detection probe 592
detection tank 592
Lean-to type greenhouse 450
Lectern 419
Lecture hall seating 435
LED fixture exterior 581
fixture interior 578
floodlight 582
lamp 582
lighting parking 580
luminaire roadway 581
Ledger wood 186
Lens movie 408
Let-in bracing 180
Letter sign 368
slot 384
Level laser 697
Leveler dock 395
truck 395
Leveling jack shoring 19
Lever handicap 301
Lexan 310
Liability employer 12
insurance 795
Library equipment demolition 392
furnishing 434
furniture 435
shelf 435
Life guard chair 444
Lift 467, 468
aerial 695
automotive 467
bariatric 416
correspondence 468
hydraulic 467
parcel 468
scissor 679, 695
slab 77, 817
truck aerial 700
wheelchair 467
Lifter platform 395
Lifting equipment rental 700
Light base formwork 56
border 580
dental 417
dock 396
exit 579
fixture interior 577, 580
fixture troffer 578
loading dock 395, 396
nurse call 587
pole 666
pole aluminum 580
pole steel 580
shield 672
stand 40
strobe 580
support 128
temporary 16
tower 697
underwater 444
Lighting 577, 578
darkroom 400
emergency 579
exit 579
explosionproof 580
exterior fixture 581
fountain 510
incandescent 578
industrial 577
outlet 564
pole 580
residential 564
stage 580
strip 577
surgical 416
temporary 16
theatrical 580
unit emergency 579
Lightning protection demo 440
suppressor 561
Lightweight aggregate 51
angle framing 129
block 108
channel framing 129
column 128
concrete 76, 78, 821
floor fill 76
framing 129
insulating concrete 87
junior beam framing 130
natural stone 113
tee framing 130
zee framing 130
Lime 97
finish 97
hydrated 97
Limestone 113, 647
coping 117
Line gore 637
remover traffic 700
Linen chute 468
collector 468
wallcovering 345
Liner cement 654
duct 524
flue 101, 116
non-fibrous duct 525
pipe 654
Lint collector 398
Lintel 113
block 108
concrete block 108
galvanizing 130
hanging 130
precast concrete 87
steel 130
Liquid chiller centrifugal 538
chiller screw 539
Load center residential 561
test pile 594
Load-bearing stud part. framing 145
stud wall bracing 143
stud wall bridging 144
stud wall framing 145
stud wall header 144
Loader front end 603
skidsteer 695
tractor 694
vacuum 41
wheeled 694
windrow 700
Loading dock 395
dock equipment 395
dock light 395, 396
Loam 594, 597
Lobby collection box 384
Lock electric release 299
entrance 301
keyless 299
time 279
tubular 299
Locker metal 383
plastic 384
steel 383
wall mount 383
wire mesh 383
Locking receptacle 564
Lockset communicating 298, 299
cylinder 298
hotel 298, 299
mortise 299
Locomotive tunnel 700
Log chipper 694
electric 380
gas 380
skidder 694
Longspan joist 139
Loose fill insulation 226
Louver 311
aluminum 311, 530
aluminum operating 530
coating 530
cooling tower 530
door 311
fixed blade 530
HVAC 530
intake-exhaust 530
midget 311
mullion type 530
redwood 312
ventilation 312
wall 312
wood 212
Louvered door 271, 273
Low sound fan 525
Lowbed trailer 700
Low-voltage silicon rectifier 573
switching 573
switchplate 573
transformer 573
Lube equipment 394
Lubrication equipment 394
Lug terminal 553
Lumber 181
core paneling 208
product prices 831
recycled plastic 214
treated 186
Luminaire roadway 581
Luminous ceiling 332, 582
panel 332

M

- Macadam 631
penetration 631
Machine auto-scrub 696
excavation 608
screw 125
trowel finish concrete 80
welding 699
X-ray 590
Machinery anchor 67
Magazine shelving 435
Magnesium dock board 395
oxychloride 254
Magnetic astragal 304
motor starter 571
particle test 16
Mahogany door 266
Mail box 384
box call system 587
box commercial 384
slot 384
Main drain 497
office expense 13
Maintenance carpet 314
railroad 670
railroad track 670
Make-up air unit 541
Mall front 284
Management fee construction 10
Manhole 664

- brick 664
- concrete 664, 667
- cover 663
- electric service 667
- frame and cover 663
- invert 663
- raise 663
- removal 29
- step 665
- Man-made soil mix 233
- Mansard aluminum 236
- Mantel beam 212
 - fireplace 212
- Manual dumbwaiter 462
- Map rail 366
- Maple countertop 428
 - floor 336
- Marble 113
 - chip 647
 - chip white 51
 - coping 117
 - countertop 429
 - floor 114
 - screen 373
 - shower stall 373
 - sill 115
 - soffit 114
 - stair 114
 - synthetic 335
 - tile 335
- Marina small boat 676
- Marine equipment rental 702
- Marker boundary and survey 28
- Markerboard electronic 366
- Mark-up cost 13
- Masking 95
- Mason scaffold 18
- Masonry accessory 99
 - aggregate 97
 - anchor 98
 - base 110
 - brick 101
 - cement 96
 - cleaning 94
 - color 97
 - cutting 34
 - demolition 32, 95, 315
 - fireplace 116
 - flashing 246
 - flooring 335
 - furring 187
 - insulation 227
 - manhole 664
 - nail 171
 - painting 359
 - panel 111
 - panel pre-fabricated 111
 - pointing 94
 - reinforcing 99, 822
 - removal 30, 96
 - restoration 97
 - saw 698
 - saving 94
 - selective demolition 95
 - sill 115
 - stabilization 94
 - step 630
 - testing 15
 - rothing 32
 - ventilator 99
 - wall 105, 644
 - wall tie 98
 - waterproofing 97
- Mass notification system 592
- Massage table 412
- Mast climber 20
- Mastic floor 341
- Mastic-backed flashing 247
- Mat blasting 603
 - concrete placement foundation 79
 - floor 431
 - foundation 76
 - foundation formwork 56
 - gym 413
 - wall 413
- Material door and window 260
 - handling 679
 - handling belt 678
 - handling conveyor 678
 - handling deconstruction 37
 - handling system 678
 - index 12
 - removal/salvage 35
- Materials concrete 815
- MC cable 553
- Meat case 403
- Mechanical 842
 - dredging 676
 - duct 522
 - equipment demolition 512
 - fee 10
 - media filter 531
 - seeding 647
- Median barrier 672
 - precast 672
- Medical distiller 416
 - equipment 415, 416, 418
 - exam equipment 416
 - sterilizer 415
 - sterilizing equipment 415
 - X-ray 418
- Medicine cabinet 379
- Medium-voltage cable 551
- Membrane flashing 241
 - protected 244
 - roofing 240, 244
 - waterproofing 222
- Mercury vapor lamp 582
- Mesh fence 639
 - gunitite 83
 - partition 374
 - security 321
 - stucco 320
- Metal bin retaining wall 643
 - bookshelf 435
 - bracing 180
 - butt frame 262
 - cabinet 428
 - cabinet school 427
 - canopy 387
 - case good 431
 - casework 306, 427
 - ceiling panel 334
 - chalkboard 365, 376
 - chimney 380
 - cleaning 120
 - corner guard 377
 - deck 142
 - deck acoustical 143
 - deck composite 141
 - deck ventilated 143
 - demolition 120
 - detector 590
 - door 261, 265, 280, 453
 - door frame 453
 - door residential 265
 - ductwork 521
 - faced wood door 269
 - facing panel 237
 - fascia 248
 - fence 639
 - fire door 266
- flashing 453
- flexible hose 491
- floor deck 143
- flue chimney 532
- frame 262
- frame channel 263
- framing parapet 151
- furring 318
- halide lamp 582
- in field galvanizing 362
- in field painting 362
- in shop galvanizing 120
- interceptor dental 496
- joist bracing 147
- joist bridging 147
- joist framing 149
- laboratory casework 427
- ladder inclined 155
- lath 316, 320
- locker 383
- molding 321
- nailing anchor 121
- overhead door 280
- paint & protective coating 120
- pan ceiling 332
- pan landing 154
- pan stair 154
- parking bumper 636
- pipe 661
- pipe removal 479
- plate stair 154
- pressure washing 120
- rafter framing 151
- recovery interceptor 496
- roof 234
- roof parapet framing 151
- roof truss 133
- sandblasting 120
- sash 287
- screen 287
- shelf 385
- shelving food storage 404
- shingle 231
- siding 234, 236
- sign 368
- soffit 240
- steam cleaning 120
- stud 316
- stud demolition 315
- stud NLB 318
- support assembly 318
- threshold 301
- tile 331
- toilet component door 370
- toilet component headrail 371
- toilet component panel 370
- toilet component pilaster 370
- toilet partition 369
- trash receptacle 431
- truss framing 153
- water blasting 120
- window 286, 287, 454
- wire brushing 120
- Metal-clad dbl. hung window 289
 - window bow & bay 290
 - window picture & sliding 290
- Metallic conduit intermediate 557
 - foil 227
 - hardener 81
 - non-shrink grout 88
- Meter electric 566
 - flow 520
 - steam condensate 521
 - Venturi flow 520
 - water supply 491
- water supply domestic 491
- Metric conversion 816
 - conversion factors 790
 - rebar specs 809
- Microphone 586
- Microtunneling 654
- Microwave oven 401
- Mill construction 189
 - extra steel 134
- Millwork 196, 425
 - & trim demolition 170
 - demolition 170
- Mineral fiber ceiling 331, 332
 - fiber insulation 226
 - fiberboard panel 347
 - insulated cable 554
 - roof 244
- Minor site demolition 29
- Mirror 309, 379
 - ceiling tile 332
 - door 309
 - glass 309, 379
 - plexiglass 310
 - wall 309, 310
- Miscellaneous painting 349, 354
- Mix design asphalt 15
 - planting pit 647
- Mixed bituminous conc. plant 594
- Mixer concrete 692
 - food 405
 - mortar 692, 697
 - plaster 697
 - road 699
- Mixes concrete 815, 816
- Mixing valve 503
- Mobile shelving 435
 - X-ray 418
- Mobilization 595, 627
 - air-compressor 595
 - equipment 22, 622, 627
 - or demobilization 22
- Model building 10
- Modification to cost 11
- Modified bitumen roof 242
 - bitumen roofing 832
 - bituminous membrane SBS 242
- Modifier labor 478
- Modular office system 375
 - playground 414
- Modulus of elasticity 15
- Mold point 696
- Moisture barrier 223
 - content test 16
- Mold abatement 46
 - abatement work area 46
 - contaminated area demolition 46
- Molding base 196
 - bed 199
 - birch 206
 - brick 206
 - casing 197
 - ceiling 199
 - chair 206
 - cornice 199, 202
 - cove 199
 - crown 199
 - dentil crown 200
 - exterior 200
 - hardboard 208
 - metal 321
 - pine 202
 - soffit 207
 - trim 206
 - window and door 207
 - wood transition 336
- Money safe 396

Monitor support	128	Municipal incinerator	418	overhead	13	Packaged terminal air cond.	542
Monitoring sampling	47	Muntin window	292	partition	375	Packaging waste	43
Monkey ladder	414	Mushroom ventilator stationary	531	partition movable	375	Pad bearing	126
Monolithic gutter	635	Music room	447	safe	396	carpet	342
terrazzo	339	Mylar tarpaulin	23	system modular	375	commercial grade carpet	342
Monorail	678			trailer	17	equipment	76
Monument survey	28			Oil-fired boiler	534	heated	52
Mop holder strip	379			fired furnace	535	vibration	126
roof	241			fired space heater	535	Padding carpet	342
sink	504			formwork	62	Paddle blade air circulator	526
Mortar	97			interceptor	496	fan	565
admixture	97			storage tank	517	tennis court	415
Mortar, brick and block	823			Oil-filled transformer	567	Paint & coating	347
Mortar cement	329, 331, 822			Oil-fired water heater	500	& coating interior floor	357
masonry cement	97			water heater commercial	500	& protective coating metal	120
mixer	692, 697			water heater residential	499	aluminum siding	351
pigment	97			Olive knuckle hinge	302	and protective coating	120
Portland cement	97			Omitted work	13	chain link fence	350
restoration	97			One piece astragal	304	door & window exterior	352
sand	97			One-way vent	253	door & window interior	354-356
testing	15			Onyx	340	encapsulation lead	44
thinset	330			Open web bar joist	140	exterior miscellaneous	350
Mortise lockset	299			Opener automatic	296	fence picket	350
Mortuary equipment	418			door	260, 277, 281, 296	floor	357
refrigeration	418			driveway security gate	279	floor concrete	357
Mosaic glass	330			handicap	296	floor wood	357
Moss peat	646			industrial automatic	296	interior miscellaneous	357
Motel/hotel hardware	296			Opening framing	453	remediation lead	44
Motion detector	590			roof frame	130	removal	45
Motor	583			Operable partition	377	removal floor	82
connection	561			Operating room equipment	417	removal lead	45
dripproof	583			Operator automatic	296	siding	351
electric	583			Option elevator	465	sprayer	697
starter	571			Ornamental aluminum rail	163	striper	699, 700
starter & control	571			column	164	trim exterior	353
starter enclosed & heated	571			glass rail	163	wall & ceiling interior	358, 359
starter magnetic	571			railing	163	wall masonry exterior	354
starter w/circuit protector	571			steel rail	163	Paint/coating cabinet	
starter w/fused switch	571			wrought iron rail	163	& casework	354
support	128			OSB faced panel	188	Painted marking airport	637
Motorized grader	693			OSHA testing	43	pavement marking	637
roof	451			Outdoor bleacher	451	Painting	839
Moulded door	270			Outlet box steel	557	balustrade	358
Mounted booth	433			lighting	564	bar joist	141
Mounting board plywood	192			Outrigger wall pole	389	booth	394
Movable louver blind	423			Oval arch culvert	662	casework	354
office partition	375			Oven	400, 406	ceiling	358, 359
Movie equipment	408			cabinet	425	clapboard	351
equipment digital	409			convection	406	concrete block	359
lens	408			microwave	401	cornice	358
projector	408			Overbed table	435	decking	350
screen	408			Overhang eave	453	drywall	358, 359
Moving building	38			endwall	453	electrostatic	358
ramp	467			Overhaul	34	exterior siding	351
ramps and walks	842			Overhead & profit	13	grille	357
shrub	651			bridge crane	678	masonry	359
stair & walk	466			commercial door	280	metal in field	362
structure	38			contractor	25, 795	miscellaneous	349, 354
tree	651			door	280, 281	parking stall	637
walk	467			hoist	679	pavement	637
Mower lawn	697			office	13	pipe	357
Mowing brush	596			support	262	plaster	358, 359
Muck car tunnel	700			Overlapping astragal	304	railing	350
Mud pump	692			Overlay face door	267, 269	reflective	637
sill	186			Overpass	644	shutter	350
trailer	699			Oversized brick	101	siding	351
Mulch bark	646			Overtime	11, 13, 794	stair stringer	350
ceramic	647			Oxygen lance cutting	35	steel	362
stone	647					steel siding	351
Mulcher power	694					stucco	351
Mulching	646					swimming pool	444
Mullion type louver	530					temporary road	637
vertical	283					tennis court	638
Multi-blade damper	523					thermoplastic	637
Multi-channel rack enclosure	586					trellis/lattice	350
Multizone air cond. rooftop	541					trim	357

N

O

P

- truss 358
- wall 351, 359
- window 355
- Palladian window 291
- Pallet rack 385
- Pan shower 246
- slab 75
- stair metal 154
- tread concrete 80
- Panel acoustical 376
- and device alarm 591
- brick wall 111
- door 270
- facing 115
- fiberglass 23, 235, 347
- fiberglass refrigeration 446
- fire 591
- FRP 345
- insulated 229
- luminous 332
- masonry 111
- metal facing 237
- metal toilet component 370
- mineral fiberboard 347
- OSB faced 188
- plastic-laminate toilet 371
- portable 376
- precast concrete double wall 85
- prefabricated 229
- sandwich 235
- shearwall 188
- sound 457
- sound absorbing 347
- sound dampening gypsum 326
- spandrel 309
- steel roofing 234
- structural 188
- structural insulated 188
- system 209
- vision 295
- wall 116
- wood folding 423
- woven wire 374
- Panelboard 570
- electric 570
- w circuit breaker 569, 570
- Paneled door 265
- pine door 271
- Paneling 208
- birch 208
- board 209
- cedar 209
- cutout 32
- demolition 170
- hardboard 208
- plywood 208
- redwood 209
- wood 208
- Panelized shingle 232
- Panic bar 298
- device 298
- Paper building 230
- sheathing 230
- Paperbacked flashing 247
- Paperhanging 344
- Paperholder 379
- Paraffin bath 116
- Parallel bar 412, 116
- Parapet metal framing 151
- Project lift 468
- Parging cement 222
- Park bench 157
- Parking barrier 637
- barrier precast 636
- bumper 637
- bumper metal 636
- bumper plastic 636
- bumper wood 637
- collection equipment 394
- control equipment 394
- equipment 394
- garage public 455
- gate 394
- gate equipment 394
- LED lighting 580
- lot paving 632
- marking pavement 637
- stall painting 637
- ticket equipment 394
- Parquet floor 336
- wood 336
- Part bin 385
- Particle board underlayment 191
- core door 267
- Parting bead 207
- Partition 374, 376
- acoustical 375, 376
- anchor 98
- block 108
- blueboard 317
- bulletproof 397
- concrete block 108
- demolition 315
- demountable 375
- door 375
- drywall 317
- folding accordion 376
- folding leaf 376
- framing load bearing stud 145
- framing NLB 318
- gypsum 375
- hospital 374
- mesh 374
- movable office 375
- NLB drywall 316
- NLB gypsum 317
- office 375
- operable 377
- plaster 316
- portable 377
- refrigeration 446
- shower 114, 373
- sliding 377
- steel 375, 377
- support 127
- thin plaster 317
- tile 104
- toilet 114, 369, 371, 372
- toilet stone 373
- wall 316
- wall NLB 316
- wire 374
- wire mesh 374
- wood frame 183
- woven wire 374
- Passage door 271, 273
- Passenger elevator 462
- elevator hydraulic 464
- elevators 841
- Patch core hole 15
- formwork 62
- roof 220
- Patching asphalt 594
- concrete floor 50
- concrete wall 50
- Patient care equipment 416
- nurse call 587
- Patio 631
- block 114, 242
- block concrete 634
- door 275
- Patio deck canopy 387
- Patterned glass 308
- Paumelle hinge 302
- Pavement 634
- asphalt 638
- asphaltic 632
- berm 635
- breaker 695
- bucket 699
- demolition 29
- emulsion 630
- marking 636
- marking painted 637
- painting 637
- parking marking 637
- planer 700
- profiler 700
- replacement 632
- sealer 638
- slate 114
- widener 699
- Paver asphalt 697
- bituminous 697
- cold mix 699
- concrete 697
- floor 335
- highway 635
- roof 254
- shoulder 699
- tile exposed aggregate 634
- Paving asphaltic concrete 632
- athletic 638
- block granite 635
- brick 634
- parking lot 632
- surface treatment concrete 633
- Pea gravel 647
- stone 51
- Peastone 648
- Peat humus 646
- moss 646
- Pedestal floor 344
- type lavatory 501
- type seating 435
- Pedestrian bridge 644
- traffic control 396
- Peephole 300
- Pegboard 208
- Penetration macadam 631
- test 15
- Penthouse roof louver 530
- Perforated aluminum pipe 664
- ceiling 332
- pipe 664
- PVC pipe 664
- Performance bond 13, 800
- Perlite insulation 224
- plaster 322
- sprayed 362
- Permit building 14
- Personal respirator 40
- Personnel field 12
- hoist 701
- protection 17
- Petrographic analysis 15
- Pew church 436
- sanctuary 436
- PEX pipe 490
- tubing 490, 546
- tubing fitting 546
- Phone booth 369
- Photoelectric control 567
- Photography 14
- aerial 14
- construction 14
- time lapse 14
- Physician's scale 416
- PIB roof 243
- Picket railing 156
- Pickup truck 698
- Pick-up vacuum 692
- Picture window 288
- window aluminum sash 286
- window steel sash 287
- window vinyl 294
- Pier brick 101
- Pigment mortar 97
- Pilaster metal toilet component 370
- plastic-laminate toilet 371
- toilet partition 373
- wood column 212
- Pile 628
- boot 625
- bored 626
- cap 77
- cap concrete placement 79
- cap formwork 55
- cutoff 594
- driven 624
- driving 802
- driving mobilization 595
- encasement 625
- foundation 628
- friction 625, 628
- H 623, 624
- hammer 693
- high strength 621
- leads 693
- lightweight 621
- load test 594
- mobilization hammer 595
- pipe 628
- point 625, 626
- point heavy duty 626
- precast 624
- prestressed 624, 628
- sod 647
- splice 625, 626
- steel 624
- steel sheet 621
- step tapered 624
- testing 594
- timber 625
- treated 625
- wood 625
- wood sheet 621
- Piling sheet 621, 853
- special cost 594
- Pillow tank 658
- Pin powder 125
- Pine door 270
- door frame 213
- fireplace mantel 212
- floor 336
- molding 202
- roof deck 190
- shelving 386
- siding 238
- stair tread 209
- Pipe & fitting 481, 482, 486-489, 492, 493, 495, 496, 506, 510, 513
- acid resistant 510
- add elevated 478
- aluminum 661, 664
- and fittings 843
- bedding 609
- bedding trench 601
- bollard 636
- brass 486
- bumper 377
- cast iron 494
- cleanout 483
- concrete 661

- copper 486
 corrosion resistant 510
 corrugated 664
 corrugated metal 661, 664
 covering 485
 covering fiberglass 485
 CPVC 490
 double wall 665
 drain 607
 drainage 510, 659, 661
 ductile iron 655
 DWV PVC 489, 659
 elbow 488
 encapsulation 44
 epoxy fiberglass wound 510
 fire retardant 510
 fitting grooved-joint 488
 foam core DWV ABS 489
 gas 665
 glass 510
 grooved-joint 487
 insulation 485
 insulation removal 42
 iron alloy mechanical joint 510
 liner 654
 metal 661
 no hub 494
 painting 357
 perforated aluminum 664
 PEX 490
 pile 628
 plastic 489, 490
 polyethylene 665
 polypropylene 510
 proxylene 510
 PVC 489, 656, 659
 rail aluminum 155
 rail galvanized 155
 rail stainless 156
 rail steel 155
 rail wall 156
 railing 155
 reinforced concrete 661
 relay 607
 removal 30
 removal metal 479
 removal plastic 479
 sewage 659, 661
 sewage collection PVC 659
 shock absorber 493
 single hub 494
 sleeve plastic 61
 soil 494
 stainless steel 489
 steel 486, 661
 subdrainage 664
 support framing 131
 tee 488
 water 655
 weld joint 487
 wrapping 854
 Piping designations 855
 Piping gas service polyethylene 665
 gasoline 665
 insulation 485
 specialty HVAC 518, 520
 storm drainage 661
 Pit excavation 602
 leaching 660
 scale 390
 sump 607
 test 28
 Pitch coal tar 241
 emulsion tar 630
 pocket 253
 Pivoted window 287
- Placing concrete 78, 817
 reinforcement 810
 Plain tube framing 282
 Plan remediation 40, 44
 Planer pavement 700
 shop 410
 Plank floor 189
 grating 158
 hollow precast concrete 84
 precast concrete nailable 84
 precast concrete roof 84
 precast concrete slab 84
 roof 190
 scaffolding 19
 Plant and bulb transplanting 651
 and planter 436
 bed preparation 647
 ground cover 648
 mixed bituminous concrete 594
 screening 694
 Planter 436, 437
 bench 437
 concrete 437
 fiberglass 437
 interior 436
 Planting 651
 Plant-mix asphalt paving 632
 Plaque bronze 368
 Plaster 316
 accessory 321
 beam 322
 ceiling 322
 cement 446
 column 322
 cutout 32
 demolition 314, 315
 drilling 318
 gauging 322
 ground 188
 gypsum 322
 mixer 697
 painting 358, 359
 partition 316
 partition thin 317
 perlite 322
 soffit 322
 thincoat 324
 venetian 323
 vermiculite 322
 wall 322
 Plasterboard 324
 Plastic angle valve 481
 ball valve 481
 bench 384
 faced hardboard 208
 fireproofing 254
 glazing 310
 grille 529
 laminate door 267
 lead 458
 locker 384
 matrix terrazzo 340
 parking bumper 636
 pipe 489, 490
 pipe removal 479
 railing 216
 screw anchor 122
 sheet flashing 247
 sign 368
 skylight 295
 toilet compartment 372
 toilet partition 372
 trench drain 497
 valve 481
 window 292
 Plastic-laminate toilet comp. 371
- toilet component 371
 toilet door 371
 toilet headrail 371
 toilet panel 371
 toilet pilaster 371
 Plastic-laminate-clad countertop 428
 Plate checkered 159
 push-pull 300
 roadway 700
 shear 172
 steel 131
 stiffener 131
 wall switch 574
 wood 187
 Plate-type heat exchanger 537
 Platform checkered plate 159
 lifter 395
 telescoping 411
 tennis 415
 trailer 698
 Plating zinc 171
 Player bench 438
 Playfield equipment 414
 Playground equipment 414, 640
 modular 414
 protective surfacing 638
 slide 414
 surface 338
 whirler 414
 Plenum barrier 347
 demolition 315
 Plexiglass 310
 acrylic 310
 mirror 310
 Plow vibrator 695
 Plug in bus-duct 571
 in circuit breaker 572
 in switch 572
 wall 99
 Plugmold raceway 573
 Plumbing 492
 appliance 498, 499
 demolition 479
 fixture 496, 500, 508, 520, 659, 843
 fixture removal 479
 laboratory 410
 Plywood 831
 clip 172
 demolition 314, 315
 fence 24
 floor 190
 formwork 52, 54
 formwork steel framed 58
 joist 193
 mounting board 192
 paneling 208
 sheathing roof & wall 192
 shelving 386
 sidewalk 24
 siding 238
 sign 368
 soffit 207
 subfloor 190
 underlayment 191
 Pneumatic control system 515
 nailer 696, 697
 tube 397
 tube system 469
 Pocket door 296
 door frame 214
 pitch 253
 Point heavy duty pile 626
 moil 696
 pile 625, 626
 Pointing CMU 94
 masonry 94
- Poisoning soil 619
 Poke-thru fitting 557
 Pole aluminum light 580
 athletic 414
 closet 206
 cross arm 666
 electrical 666
 light 666
 lighting 580
 portable decorative 396
 steel light 580
 telephone 666
 utility 580, 666
 wood 666
 wood electrical utility 666
 Polished concrete 818
 Polishing concrete 82
 Polyacrylate floor 341
 terrazzo 341
 Polycarbonate glazing 310
 Polyester floor 342
 Polyethylene backer rod 64
 coating 654
 film 647
 floor 343
 pipe 665
 pool cover 444
 septic tank 660
 tarpuilin 22
 waterproofing 222, 223
 Polymer trench drain 497
 Polyolefin roofing thermoplastic 243
 Polypropylene pipe 510
 shower 502
 siding 239
 valve 482
 Polystyrene blind 214
 ceiling 332, 446
 ceiling panel 332
 insulation 224, 226, 446
 Polysulfide caulking 257
 Polyurethane caulking 257
 floor 341, 342
 varnish 362
 Polyvinyl chloride (PVC) 38
 soffit 207, 240
 tarpuilin 22
 Polyvinyl-chloride roof 243
 Pool accessory 444
 cover 444
 cover polyethylene 444
 filtration swimming 509
 heater electric 534
 swimming 443
 Porcelain tile 329
 Porch framing 184
 Portable air compressor 695
 asphalt plant 699
 booth 456
 building 17
 cabinet 404
 chalkboard 366
 eye wash 508
 fire extinguisher 382
 floor 337
 panel 376
 partition 377
 post 396
 scale 390
 stage 411
 Portland cement 51
 cement terrazzo 339
 Positive pressure chimney 532
 Post athletic 415
 cap 172
 cedar 213

- concrete 672
 demolition 168
 driver 699
 fence 639
 lamp 162, 580
 pedestrian traffic control 396
 portable 396
 recreational 411
 shore 61
 sign 369
 tennis court 638
 Postal specialty 384
 Postformed countertop 428
 Post-tensioned concrete 820
 slab on grade 74
 Potable water softener 498
 water treatment 498
 Pottery wheel 410
 Poured gypsum underlayment 88
 Powder actuated tool 125
 charge 125
 pin 125
 Power equipment 800
 mulcher 694
 temporary 16
 trowel 692
 wiring 574
 Preblast survey 603
 Precast beam 85
 bridge 644
 catch basin 664
 column 85
 concrete beam 84
 concrete channel slab 84
 concrete column 85
 concrete joist 85
 concrete lintel 87
 concrete nailable plank 84
 concrete plantable paver 634
 concrete roof plank 84
 concrete slab plank 84
 concrete stair 84
 concrete tee beam 85
 concrete tee beam double 85
 concrete tee beam quad 85
 concrete tee beam single 85
 concrete unit paving slab 634
 concrete wall 86
 concrete wall panel tilt-up 86
 concrete window sill 87
 concrete 821
 coping 117
 curb 635
 median 672
 members 819
 parking barrier 636
 pile 624
 receptor 373
 septic tank 660
 tee 85
 terrazzo 340
 wall 821
 wall panel 86
 wall panel insulated 86
 Pre-engineered steel building 152
 steel building demo 111
 steel buildings 840
 Prefab metal flue 532
 Prefabricated building 150
 comfort station 155
 fireplace 380
 Prefabricated masonry panel 111
 Prefabricated panel 229
 wood stair 209
 Prefinished door 267
 drywall 325
 floor 336
 hardboard paneling 208
 shelving 386
 Preformed roof panel 234
 roofing & siding 234
 Pre-hung door 272, 273
 Preparation exterior surface 347
 interior surface 349
 plant bed 647
 Presser laundry 399
 Pressure grouting cement 622
 reducing valve water 481
 regulator 491
 regulator steam 491
 relief valve 481
 switch switchboard 569
 valve relief 481
 wash 348
 washer 697
 washing metal 120
 Pressurized fire extinguisher 383
 Prestressed concrete 820
 concrete pile 624
 pile 624, 628
 precast concrete 819
 Prestressing steel 73
 Preventer backflow 492
 Prices lumber products 831
 Prime coat 631
 Primer asphalt 220, 338
 steel 362
 Prison cell 457
 cot 434
 door 279
 equipment 279
 fence 641
 hinge 302
 toilet 397
 Process air handling fan 525
 Processing concrete 82
 Proctor compaction test 16
 Produce case 403
 Product piping 666
 Productivity glazing 835
 Profile block 106
 Profiler pavement 700
 Progress schedule 14
 Project overhead 13
 sign 24
 Projected window aluminum 286
 window steel 287
 window steel sash 287
 Projection screen 365, 408
 Projector movie 408
 Propeller exhaust fan 527
 unit heater 545
 Property line survey 28
 Protected membrane 244
 Protection corner 377
 fire 382
 slope 619
 stile 304
 temporary 25
 termite 619
 winter 23, 52
 worker 41
 Protector door 296
 Proxylene pipe 510
 P&T relief valve 481
 PTAC unit 542
 Public address system 586
 Pull box 557
 box electrical 557
 door 426
 plate 300
 Pulpit church 419
 Pump 520, 659
 centrifugal 697
 circulating 520
 concrete 692
 condensate 521
 condensate removal 521
 condensate return 521
 contractor 607
 diaphragm 697
 fire 475
 fire jockey 475
 fountain 509
 general utility 493
 grinder system 496
 grout 698
 heat 543
 in-line centrifugal 520
 jack 18
 mud 692
 operator 607
 sewage ejector 496
 shallow well 659
 shotcrete 692
 staging 18, 801
 submersible 498, 659, 697
 sump 402, 497
 trash 698
 water 520, 659, 697
 water supply well 659
 wellpoint 701
 Pumped concrete 79
 Pumping 607
 dewater 607
 Purlin roof 189
 steel 134
 Push button lock 298
 plate 300
 Push-on joint 655
 Push-pull plate 300
 Putlog scaffold 20
 Putting surface 343
 Puttying 347
 PVC adhesive 223
 blind 422
 cleanout 484
 conduit in slab 559
 control joint 99
 cornerboard 217
 door casing 217
 fascia 217
 fitting 656
 flashing 247
 frieze 217
 gravel stop 248
 molding exterior 217
 pipe 489, 656, 659
 pipe perforated 664
 rake 217
 roof 243
 sheet 223, 343
 siding 238
 soffit 217
 trim 217
 underground duct 667
 valve 481
 waterstop 62
 Raceway 557, 559, 560
 conduit 556
 plugmold 573
 surface 573
 wiremold 573
 Rack bicycle 414
 coat 385, 425
 hat 385
 hose 473
 pallet 385
 Racquetball court 448
 Radial arch 193
 wall formwork 57
 Radiant floor heating 546
 Radiation fin tube 545
 Radiator cast iron 545
 supply control 519
 thermostat control system 515
 Radio frequency shielding 459
 tower 667
 Radiography test 16
 Radiology equipment 418
 Rafter anchor 172
 composite 185
 demolition 168
 framing metal 151
 metal bracing 151
 metal bridging 151
 tie 186
 wood 185, 186
 Rail aluminum pipe 155
 crane 678
 crash 378
 dock shelter 395
 galvanized pipe 155
 guide 672
 guide/guard 672
 map 366
 ornamental aluminum 163
 ornamental glass 163
 ornamental steel 163
 ornamental wrought iron 163
 stainless pipe 156
 steel pipe 155
 trolley 378
 wall pipe 156
 Railing cable 163
 church 419
 demolition 170
 industrial 156
 ornamental 163
 picket 156
 pipe 155
 plastic 216
 wood 206, 209, 211
 wood stair 210
 Railroad ballast 670
 bumper 670
 concrete tie 670
 derail 670
 maintenance 670
 siding 673, 855
 tie 631, 650
 tie step 630
 timber switch tie 670
 timber tie 670
 track accessory 670
 track heavy rail 670
 track maintenance 670
 chip 51
 flooring 342
 Quoin 113

R

Q

- track material 670
- track removal 30
- turnout 673
- wheel stop 670
- Raise manhole 663
 - manhole frame 663
- Raised floor 344
- Rake PVC 217
 - tractor 694
- Rammer/tamper 693
- Ramp approach 344
 - handicap 76
 - moving 467
 - temporary 22
- Ranch plank floor 336
- Range cooking 400
 - hood 401
 - receptacle 564, 574
 - restaurant 406
 - shooting 413, 414
- Ratio water cement 15
- Razor wire 641
- Reach-in refrigeration 403
- Reading table 435
- Ready mix concrete 78, 817
- Rebar accessory 68
- Receiver ash 379, 430
 - trash 430
- Receptacle air conditioner 564
 - device 563
 - dryer 564
 - duplex 574
 - GFI 563
 - locking 564
 - range 564, 574
 - telephone 564
 - television 564
 - trash 437
 - waste 379
 - weatherproof 563
- Receptor precast 373
 - shower 373, 502, 504
 - terrazzo 373
- Recessed mat 431
- Reciprocating water chiller 538
- Recirculating chemical toilet 686
- Recorder videotape 591
- Recore cylinder 298, 300
- Recovery heat 418
- Recreational post 414
- Rectangular diffuser 528
 - ductwork 521
- Rectifier low-voltage silicon 573
- Recycled plastic lumber 214
 - rubber tire tile 431
- Reduce heat transfer glass 308
- Redwood bark mulch 647
 - cupola 387
 - louver 312
 - paneling 209
 - siding 237
 - wine cellar 404
- Refinish floor 336
- Reflective block 110
 - glass 309
 - insulation 227
 - painting 637
 - sign 369
- Reflectorized barrels 696
- Refrigerant removal 512
- Refrigerated case 403
 - storage equipment 403
 - wine cellar 404
- Refrigeration 446
 - bloodbank 410
 - commercial 403
 - equipment 445
 - floor 446
 - insulation 446
 - mortuary 418
 - panel fiberglass 446
 - partition 446
 - reach-in 403
 - residential 401
 - walk-in 446
- Refrigerator door 277
- Refuse chute 468
 - hopper 468
- Register air supply 529
 - cash 398
 - return 529
 - steel 529
 - wall 529
- Reglet aluminum 251
 - galvanized steel 251
- Regulator pressure 491
 - steam pressure 491
- Reinforced concrete pipe 661
 - culvert 661
 - plastic panel fiberglass 345
 - PVC roof 243
- Reinforcement 810
 - welded wire 811
- Reinforcing 810
 - accessory 68
 - bar chair 69
 - bar splicing 70
 - bar tie 68
 - beam 71
 - chair subgrade 69
 - coating 72
 - column 71
 - concrete 71
 - dowel 72
 - elevated slab 71
 - epoxy coated 72
 - footing 71
 - galvanized 72
 - girder 71
 - glass fiber rod 72
 - high chair 68
 - joint 99
 - masonry 99
 - metric 809
 - slab 71
 - sorting 71
 - spiral 71
 - steel 809, 810
 - steel fiber 74
 - synthetic fiber 74
 - testing 15
 - tie wire 70
 - wall 71
- Relay pipe 607
- Release door 587
- Relief valve P&T 481
 - valve self-closing 481
 - valve temperature 481
 - vent ventilator 531
- Relining sewer 654
- Remediation plan 40, 44
 - plan/method asbestos 40
- Remote power pack 567
- Removal air conditioner 512
 - asbestos 42
 - bathub 479
 - block wall 31
 - boiler 512
 - catch basin 29
 - concrete 29
 - concrete pipe 30
 - curb 29
 - driveway 29
 - fixture 479
 - floor 31
 - guide rail 29
 - hydrant 29
 - insulation 42, 221
 - lavatory 479
 - masonry 30, 96
 - paint 45
 - pipe 30
 - pipe insulation 42
 - plumbing fixture 479
 - railroad track 30
 - refrigerant 512
 - shingle 221
 - sidewalk 30
 - sink 479
 - sod 647
 - steel pipe 30
 - stone 30
 - stump 596
 - tank 39
 - tree 595, 596
 - urinal 479
 - vat 42
 - water closet 479
 - water fountain 479
 - water heater 479
 - water softener 479
 - window 260
- Removal/salvage material 35
- Remove bolt 120
 - nut 120
- Rendering 10
- Renovation tread cover 160
- Rental equipment 692
- Repellent water 359
- Replacement joint sealant 220
 - pavement 632
- Resaturant roof 220
- Residential alarm 565
 - appliance 400, 565
 - application 561
 - bathub 502
 - closet door 265
 - device 561
 - dishwasher 401
 - door 213, 265, 270
 - door bell 564
 - dryer 402
 - elevator 463
 - fan 565
 - fixture 564
 - folding partition 376
 - garage 455
 - gas water heater 499
 - greenhouse 450
 - gutting 34
 - heat pump 566
 - hinge 302
 - kitchen sink 501
 - lavatory 501, 504
 - lighting 564
 - load center 561
 - lock 298
 - oil-fired water heater 499
 - overhead door 280
 - refrigeration 401
 - roof jack 527
 - service 561
 - sink 501
 - smoke detector 565
 - stair 209
 - storm door 261
 - switch 561
 - transition 527
 - wall cap 527
 - wash bowl 501
 - washer 402
 - water heater 402, 499, 566
 - water heater electric 498
 - wiring 561, 565
- Resilient base 337
 - floor 338
 - pavement 638
- Resistance corrosion 654
- Respirator 41
 - personal 40
- Resquared shingle 232
- Restaurant furniture 433
 - range 406
- Restoration gypsum 314
 - masonry 97
 - mortar 97
 - window 45
- Retaining wall 77, 644
 - wall cast concrete 642
 - wall concrete segmental 643
 - wall formwork 58
 - wall segmental 643
 - wall stone 644
 - wall stone gabion 644
 - wall timber 643
- Retarder concrete 78
 - vapor 230
- Retractable lateral arm awning 386
- Return register 529
- Revolving darkroom 447
 - dome 455
 - door 278, 284, 449
 - door darkroom 278
 - entrance door 283
- Rewind table 409
- Rib lath 320
- Ribbed siding 236
 - waterstop 62
- Ridge board 186
 - cap 231, 234
 - flashing 453
 - roll 235
 - shingle slate 231
 - vent 252
- Rig drill 28
- Rigid anchor 98
 - conduit in trench 559
 - in slab conduit 559
 - insulation 224
 - joint sealant 258
- Ring boxing 413
 - split 172
 - toothed 173
- Ripper attachment 699
- Riprap and rock lining 620
- Riser pipe wellpoint 702
 - rubber 338
 - stair 340
 - terrazzo 340
 - wood stair 210
- River stone 51
- Rivet 125
 - aluminum 125
 - copper 125
 - stainless 125
 - steel 125
 - tool 125
- Road base 631
 - berm 635
 - mixer 699
 - sign 369
 - sweeper 699
 - temporary 22
- Roadway LED luminaire 581

- luminaire 581
plate 700
Robe hook 379
Rock bolt drilling 602
 bolting 620
 drill 28, 602
 removal 602
 trencher 695
Rod backer 256
 closet 386
 curtain 378
 ground 556
 shower 378
 tie 130, 621
 weld 127
Roll ridge 235
 roof 240
 roofing 244
 type air filter 531
Roller compaction 608
 sheepsfoot 608, 619, 694
 tandem 694
 vibratory 694
Rolling door 276, 285
 earth 619
 grille support 262
 ladder 20
 roof 286
 service door 277
 tower scaffold 20
Roll-up exterior shutter 386
Romex copper 554
Roof accessory 253
 adhesive 240
 aluminum 234
 baffle 253
 beam 193
 bracket 21
 built-up 240
 cant 186, 241
 clay tile 233
 coating 220
 cold-applied built-up asphalt 240
 copper 245
 CSPE 242
 curb 186
 deck 190
 deck formboard 59
 deck gypsum 87
 deck insulation 228
 deck laminated 190
 deck wood 190
 decking 142
 dome 285
 drain 497
 elastomeric 244
 exhauster 526
 expansion joint 251
 fan 526
 fiberglass 235
 fill 821
 frame opening 130
 framing removal 32
 gravel 51
 hatch 253
 hatch removal 221
 insulation 228, 453
 jack 186
 jack residential 527
 joint 252
 lead 245
 membrane green 234
 metal 234
 metal rafter framing 151
 metal tile 233
 metal truss framing 153
 mineral 244
 modified bitumen 242
 mop 241
 nail 171
 panel aluminum 234
 panel preformed 234
 patch 220
 paver 254
 paver and support 254
 PIB 243
 polyvinyl-chloride 243
 purlin 189
 PVC 243
 rafter bracing 151
 rafter bridging 151
 rafter framing 185
 reinforced PVC 243
 resaturant 220
 roll 240
 rolling 286
 safety anchor 21
 sheathing 192
 sheet metal 245
 shingle 231
 shingle asphalt 230
 slate 231, 831
 soffit framing 152
 soil mixture green 233
 specialty prefab 248
 stainless steel 245
 steel 234
 stressed skin 131
 system green 233
 thermoplastic polyolefin 243
 tile 233
 TPO 243
 truss 193, 194
 vent 252, 454
 ventilator 253
 walkway 242
 zinc 245
Roofing & siding preformed 234
 built-up 831
 cold 240
 demolition 42, 221
 EPDM 243
 flat seam sheet metal 245
 membrane 240, 244
 modified bitumen 242
 roll 244
 single-ply 242
 SPF 244
 system built-up 240
Rooftop air conditioner 541
 multizone air conditioner 541
Room acoustical 446, 447
 audiometric 446
 clean 445
 humidifier 548
Rope decorative 396
 exercise 412
 safety line 21
 steel wire 137
Rosewood door 266
Rotary crawler drill 696
 hammer drill 696
Rototiller 694
Rough buck 183
 grading 597
 grading site 597
 hardware 180
 stone wall 112
Rough-in drinking fntn. deck 509
 drinking fountain floor 508
 drinking fountain wall 508
 sink countertop 502
 sink raised deck 502
 sink service floor 504
 sink service wall 504
 tub 502
Round bar fiberglass 215
 diffuser 529
 rail fence 642
 table 433
 tube fiberglass 215
Rowing machine 412
Rub finish carborundum 81
Rubber astragal 304
 base 337
 coating 224
 control joint 99
 dock bumper 395
 floor 338, 638
 floor tile 338
 nosing 338
 pavement 638
 pipe insulation 485
 riser 338
 sheet 338
 stair 337
 threshold 301
 tile 339
 waterproofing 223
 waterstop 63
Rubberized asphalt sealcoat 630
Rubbing wall 81
Rubbish handling 33
 handling chutes 803
Rumble strip 672
Run gravel bank 594
Running track 337
 track surfacing 638
 trap 494
Rupture testing 15
- S**
- Safe commercial 396
 diskette 396
 office 396
Safety deposit box 397
 equipment laboratory 410
 eye face equipment 508
 fixture industrial 507
 glass 308
 line rope 21
 net 18
 nosing 337
 railing cable 138
 shower 507
 switch 574
Salamander 698
Sales tax 12, 793
Salvage or disposal value 35
Sample field 47
Sampling air 40
Sanctuary pew 436
Sand 97
 brick 51
 concrete 51
 fill 594
 screened 97
 seal 630
Sandblast finish concrete 81
 glass 307
 masonry 95
Sandblasting equipment 698
 metal 120
Sander floor 698
Sanding 347
 floor 336
Sandstone 114
 flagging 635
Sandwich panel 235
 wall panel 237
Sanitary base cove 328
 drain 495
Sash 454
 aluminum 286
 metal 287
 prefinished storm 454
 security 287
 steel 287
 wood 289
Sauna 447
 door 447
Saw blade concrete 89
 brick 94
 chain 698
 circular 698
 concrete 692
 cutting concrete floor 89
 cutting concrete wall 89
 cutting demolition 34
 cutting slab 89
 masonry 698
 shop 410
 table 411
Sawing masonry 94
Sawn control joint 63
SBS modified bitum. membrane 242
Scaffold aluminum plank 21
 baseplate 19
 bracket 19
 caster 19
 catwalk 20
 frame 19
 guardrail 19
 mason 18
 putlog 20
 rolling tower 20
 specialty 20
 stairway 19
 wood plank 19, 21
Scaffolding 801
 plank 19
 tubular 18
Scale 390
 commercial 390
 contractor 390
 crane 390
 physician's 416
 pit 390
 portable 390
 truck 390
 warehouse 390
Scanner checkout 398
 unit facial 306
Scanify concrete 315
Schedule 14
 board 367
 critical path 14
 progress 14
School cabinet 427
 crosswalk 671
 door hardware 296
 equipment 413
 furniture 434
 hinge 302
 panic device door hardware 296
 T.V. 591
Scissor gate 375
 lift 679, 695
Scoreboard baseball 413
 basketball 413
 football 413
 hockey 413

- Scored block 106
 split face block 106
 Scraper earth 694
 elevating 605
 excavation 605
 mobilization 22
 self propelled 606
 Scratch coat 340
 Screed base 69
 Screed, gas engine,
 8HP vibrating 692
 Screed holder 69
 Screen chimney 380
 entrance 370
 fence 642
 metal 287
 molding 206
 projection 365, 408
 security 162, 287
 sight 376
 squirrel and bird 380
 urinal 373
 window 287, 292
 wood 292
 Screened sand 97
 Screening plant 694
 Screen/storm door aluminum 261
 Screw aluminum 236
 anchor 69, 121
 anchor bolt 69
 brass 171
 drywall 328
 eye bolt 69
 jack 621
 lag 125
 liquid chiller 539
 machine 125
 sheet metal 171
 steel 171
 water chiller 539
 wood 171
 Screw-on connector 553
 Scroll water chiller 539
 Scrub station 417
 Scupper drain 497
 floor 497
 Seal compression 256
 curb 630
 door 395
 fog 630
 grout 330
 pavement 630
 security 304
 Sealant 222, 230
 acoustical 258, 326
 caulking 257
 replacement joint 220
 rigid joint 258
 tape 258
 Sealcoat 630
 Sealer floor 51
 joint 256, 257
 pavement 638
 Seamless floor 341
 Seating church 419
 movie 409
 Secondary treatment plant 686
 Sectional door 280
 overhead door 280
 Security and vault equipment 396
 barrier 396
 bollard 671
 door and frame 278
 driveway gate 278
 driveway gate aluminum 279
 driveway gate steel 278
 driveway gate wood 278
 fence 641
 film 310
 gate 375
 gate driveway 278
 gate opener driveway 279
 hinge 302
 mesh 321
 planter 671
 sash 287
 screen 162, 287
 seal 304
 turnstile 396
 vault door 279
 vehicle barrier 671
 X-ray equipment 590
 Sediment bucket drain 495
 strainer Y valve 482
 Seeding 647, 854
 See-saw 414
 Segmental conc. retaining wall 643
 retaining wall 643
 Seismic bracing 840
 bracing support 482
 ceiling bracing 333
 Selective clearing 596
 demolition equipment 392
 demolition fencing 30
 demolition masonry 95
 tree removal 596
 Self-closing relief valve 481
 Self-contained air conditioner 542
 Self-propelled scraper 605
 Self-supporting tower 667
 Sentry dog 24
 Separation barrier 41, 46
 Separator air 518
 Septic galley 660
 system 660
 system effluent-filter 660
 tank 660
 tank concrete 660
 tank polyethylene 660
 tank precast 660
 Service door 276
 electric 574
 entrance cable aluminum 554
 laboratory analytical 47
 residential 561
 sink 504
 sink faucet 505
 station equipment 394
 Sewage aeration 686
 collection concrete pipe 659
 collection PVC pipe 659
 ejector pump 496
 municipal waste water 686
 pipe 659, 661
 treatment plant 686
 Sewage/drainage collection 661
 Sewer relining 654
 Shade 424
 Shaft wall 316
 Shake wood 232
 Shape structural aluminum 135
 Shear connector welded 126
 plate 172
 test 16
 wall 192
 Shearwall panel 188
 Sheathed nonmetallic cable 554
 Romex cable 554
 Sheathing 191, 192
 asphalt 192
 board 191
 gypsum 193
 insulating 190
 paper 230
 roof 192
 roof & wall plywood 192
 wall 192
 Sheepsfoot roller 608, 619, 694
 Sheet carpet 343
 glass 309
 glass mosaic 331
 lead 458
 metal 245
 metal aluminum 248
 metal flashing 246
 metal roof 245
 metal screw 171, 236
 piling 621, 853
 steel pile 624
 Sheeting 621
 driver 696
 open 623
 tie back 623
 wale 621
 wood 607, 621, 853
 Shelf bathroom 379
 bin 385
 library 435
 metal 385
 Shellac door 354
 Shell-type heat exchanger 537
 Shelter aluminum 456
 dock 395
 golf 414
 rail dock 395
 temporary 52
 Shelving 386
 food storage metal 404
 mobile 435
 pine 386
 plywood 386
 prefinished 386
 refrigeration 446
 steel 385
 storage 385
 wood 386
 Shield expansion 121
 lag screw 121
 light 672
 Shielded copper cable 551
 Shielding lead 458
 radio frequency 459
 Shift work 11
 Shingle 230, 231
 aluminum 231
 asphalt 230
 cedar 231
 concrete 233
 metal 231
 panelized 232
 removal 221
 roof 231
 slate 231
 steel 231
 strip 230
 wood 231
 Ship ladder 155
 Shock absorber 493
 absorber pipe 493
 absorbing door 260, 282
 Shooting range 413, 414
 Shop drill 410
 equipment 410
 Shore post 61
 Shoring 621, 622
 aluminum joist 61
 baseplate 19
 bracing 19
 concrete formwork 61
 concrete vertical 61
 flying truss 61
 frame 61
 heavy duty 19
 leveling jack 19
 slab 20
 steel beam 61
 temporary 621
 Short load concrete 78
 Shot blast floor 315
 blaster 698
 Shotcrete 83
 pump 692
 Shoulder paver 699
 Shovel 603
 crawler 694
 Shower arm 502
 built-in 502
 by-pass valve 503
 cabinet 373
 compartment 373
 cubicle 502
 door 373
 drain 494
 emergency 507
 enclosure 373
 glass door 373
 group 504
 pan 246
 partition 114, 373
 polypropylene 502
 receptor 373, 502, 504
 rod 378
 safety 507
 stall 502
 surround 373
 Shower tub control set 503
 Shower-tub valve spout set 503
 Shredder 419
 compactor 419
 Shrinkage test 15
 Shrub and tree 648
 broadleaf evergreen 649
 deciduous 649
 evergreen 648
 moving 651
 Shutter 423
 exterior 214
 exterior roll-up 386
 interior 423
 wood 214
 wood interior 423
 Side coiling grille 276
 Sidelight 213
 door 265, 272
 Sidewalk 335, 634
 asphalt 630
 brick 634
 bridge 20
 broom 698
 concrete 630
 driveway and patio 630
 removal 30
 temporary 24
 Sidewall bracket 21
 Siding aluminum 236
 bevel 237
 cedar 237
 fiber cement 239
 fiberglass 235
 metal 234, 236
 nail 171
 paint 351
 painting 351
 panel aluminum 236

- plywood 238
polypropylene 239
railroad 673, 855
redwood 237
removal 221
ribbed 236
stain 238
steel 236
vinyl 238
wood 237
wood board 237
- Sieve analysis 15
- Sign 24, 368, 369
 acrylic 368
 aluminum 368
 base formwork 56
 corridor 368
 detour 23
 directional 369
 flexible 368
 highway 369
 letter 368
 metal 368
 plastic 368
 plywood 368
 post 369
 project 24
 reflective 369
 road 369
 stainless 368
 street 368
 traffic 369
- Signage engraved panel 368
 exterior 368
- Signal bell fire 591
 system traffic 671
- Silencer duct 523
- Silica chip 51
- Silicon carbide abrasive 50, 80
- Silicone 257
 caulking 258
 coating 224
 water repellent 224
- Sill 113
 & ledger framing 186
 anchor 172
 block 110
 door 207, 213, 301
 masonry 115
 mud 186
 precast concrete window 87
 quarry tile 330
 stone 112, 115
 window 289
 wood 186
- Sillcock hose bibb 503
- Silo 457
 demo 441
- Silt fence 619
- Simulated brick 116
 stone 117, 118
- Single hub pipe 494
 long aluminum sash window 286
 long aluminum window 286
 precast concrete tee beam 85
 zone rooftop unit 511
- Single-ply roofing 242
- Sink barber 398
 base 425
 countertop 501
 countertop rough in 502
 darkroom 409
 dinet kitchen 503
 kitchen 501
 laboratory 409, 410
 laundry 502
- lavatory 501
- mop 504
- raised deck rough-in 502
- removal 479
- residential 501
- service 504
- service floor rough-in 504
- service wall rough-in 504
- support 506
- Site clear and grub 595
 clearing 595
 demolition 29
 furnishing 437
 grading 597
 improvement 437, 645
 plan 10
 preparation 28
 rough grading 597
- Skidder log 694
- Skidsteer attachments 695
 loader 695
- Skylight fiberglass panel 454
 plastic 295
 removal 221
- Skyroof 285
- Slab blockout formwork 57
 box out opening formwork 55
 bulkhead formwork 55, 56
 concrete 75
 concrete placement 79
 curb formwork 55, 56
 cutout 32
 edge form 143
 edge formwork 55, 56
 elevated 75
 flat plate formwork 54
 haunch 76
 haunch formwork 76
 joist dome formwork 54
 joist pan formwork 54
 lift 77, 817
 lifting insert 69
 on grade 76
 on grade formwork 56
 on grade post-tensioned 74
 on grade removal 30
 pan 75
 precast concrete channel 84
 reinforcing 71
 reinforcing bolster 68
 saw cutting 89
 screed formwork 57
 shoring 20
 stamping 82
 textured 77
 thickened edge 76
 thickened edge formwork 76
 trench formwork 57
 turndown 76
 turndown formwork 76
 void formwork 55, 57
 waffle 75
 with drop panel formwork 54
- Slate 114
 flagging 635
 pavement 114
 roof 231, 831
 shingle 231
 sidewalk 635
 sill 115
 stair 115
 tile 335
- Slatwall 209, 346
- Sleeper floor 186
 framing 186
 wood 186
- Sleeve anchor bolt 64
 dowel 72
 formwork 61
 plastic pipe 61
- Slide gate 639
 playground 414
 swimming pool 444
- Sliding aluminum door 275
 chalkboard 365
 door 266
 door shower 373
 door steel 266
 entrance door 283
 glass door 275
 glass vinyl-clad door 275
 mirror 379
 panel door 285
 partition 377
 vinyl clad door 275
 window 289
 window aluminum 286
- Slipform paver barrier 699
 paver curb 699
- Slipforms 806
- Slope protection 619
 protection rip-rap 620
- Slot letter 384
- Slotted block 108
 channel framing 130
 pipe 662
- Slump block 106
- Slurry seal (latex modified) 630
 trench 623
- Small tool 22
- Smart electrical metering 567
- Smoke detector 592
 hatch 253
 vent 253
 vent chimney 532
- Snap-tie formwork 61
- Snow fence 39
 guard 253
- Soaking bathroom 502
 tub 502
- Soap dispenser 379
 holder 379
- Soccer goalpost 415
- Socket ground 414
 wire rope 136
- Sod 648
 tennis court 638
- Sodding 648
- Sodium high pressure fixture 582
 low pressure fixture 581
- Soffit & canopy framing 186
 drywall 324
 framing wood 186
 marble 114
 metal 240
 molding 207
 plaster 322
 plywood 207
 polyvinyl 207, 240
 PVC 217
 steel 453
 stucco 323
 vent 312
 wood 207
- Softener water 498
- Soil compaction 608
 decontamination 39
 mix man-made 233
 pipe 494
 poisoning 619
 sample 29
 stabilization 619
- tamping 608
- test 16
- treatment 619
- Solar energy 537
 energy circulator air 536
 energy system collector 536
 energy system controller 537
 energy sys. heat exchanger 537
 film glass 310
 heating 846
 heating system 536
 panel driveway security gate 279
 screen block 109
- Soldier beam 623
- Solid core door 268
 surface countertop 429
 wood door 270
- Sorting reinforcing 71
- Sound absorbing panel 347
 attenuation blanket 346
 control demo 441
 curtain 457
 dampening panel gypsum 326
 movie 408
 panel 457
 proof enclosure 446
 system 586
 system speaker 586
- Source heat pump water 543
- Space heater 697
 heater floor mounted 535
 office & storage 17
- Spade air 696
 tree 695
- Spandrel beam formwork 52
 glass 309
- Spanish roof tile 233
- Speaker movie 409
 sound system 586
 station nurse 587
- Special construction 457
 door 274, 279
 hinge 302
 nurse call system 587
 purpose room demo 441
- Specialty 378
 demo 364
 piping HVAC 518, 520
 scaffold 20
 telephone 369
- Specific gravity 15
 gravity testing 15
- Speed bump 672
- SPF roofing 244
- Spike grid 172
- Spinner ventilator 530
- Spiral reinforcing 71
 stair 163, 209
- Spire church 388
- Splice pile 625, 626
- Splicer movie 409
- Splicing reinforcing bar 70
- Split astragal 304
 rail fence 642
 rib block 106
 ring 172
 system control system 515
- Splitter damper assembly 523
- Spotlight 580
- Spotter 615
- Spray coating 222
 insulation 227
 painting booth automotive 394
 rig foam 696
 substrate 43
 sprayed cementitious fireproofing 254

Sprayed-on insulation	227	carpet	343	jacketed kettle	406	reinforcing	809, 810
Sprayer airless	40	ceiling	403	pressure valve	519	rivet	125
emulsion	696	climber	467	regulator pressure	491	roof	234
paint	697	concrete	77	trap	519	roofing panel	234
Spread footing	76	disappearing	403	Steamer	406	salvage	479
footing formwork	56	electric	403	Steel anchor	98	sash	287, 833
Spreader aggregate	692, 699	finish concrete	81	astragal	304	screw	171
chemical	699	fire escape	155	ballistic door	278	sections	827
concrete	697	floor plate	154	beam shoring	61	security driveway gate	278
laundry	398	formwork	59	beam W-shape	131	sheet pile	621
Spring bolt astragal	304	grating	154	bin wall	643	shelving	385
bronze weatherstrip	304	landing	340	blocking	180	shingle	231
hinge	302	marble	114	bolt	172	siding	236
Sprinkler alarm	591	metal pan	154	bolt & hex nut	123	silo	457
head	473	metal plate	154	bridge	644	standpipe	658
irrigation system	645	nosing	338, 339	bridging	181	structural	825
system	473	pan tread	80	building components	828	stud NLB	318
system accelerator	474	parts wood	209	building pre-engineered	452	tank	519
system automatic	645	precast concrete	84	chain	162	tank above ground	517
system dry-pipe	474	prefabricated wood	209	channel	321	testing	14
underground	645	railroad tie	631	conduit in slab	559	tower	667
Square bar fiberglass	215	removal	169	conduit in trench	559	underground duct	667
tube fiberglass	215	residential	209	conduit intermediate	557	underground storage tank	516
Squash court	448	riser	340	conduit rigid	556	valve	513
court backstop	415	riser vinyl	338	corner guard	377	water storage tank	658
Stabilization fabric	631	rubber	337	cutting	122	water tank ground level	658
masonry	94	slate	115	demolition	120	weld rod	127
soil	619	spiral	163, 209	detention door	279	well casing	659
Stabilizer base	700	stringer	340	diffuser	529	window	287, 454
Stacked bond block	107	stringer framing	183	dome	455	window demolition	260
Stadium	451	stringer wood	183	door	263-265, 279, 280, 453, 833	wire rope	137
bleacher	451	temporary protection	24	door and frame stainless	273	wire rope accessory	136
cover	449	terrazzo	339	door residential	265	Steeple	388
stage curtain	411	tread	112, 159, 337	downspout	249	aluminum	388
equipment	411	tread and riser	337	drill	696	tip pin	302
equipment demolition	392	tread fiberglass	215	drilling	122	Steps	369
lighting	580	tread insert	62	edging	631, 650	bluestone	631
portable	411	tread terrazzo	340	estimating	825	brick	630
Staging aids	21	tread tile	330	expansion tank	518	manhole	665
pump	18	wood	209	fence	639, 641	masonry	630
swing	21	Stairlift wheelchair	467	fiber reinforcing	74	railroad tie	630
Stain cabinet	354	Stairway door hardware	296	flashing	246	stone	113
door	354	scaffold	19	frame	262	tapered pile	624
floor	357	Stairwork handrail	211	framing	133	Sterilizer barber	398
lumber	194	Stake formwork	62	furring	318	dental	417
siding	238	nail	62	girt	134	glassware	410
truss	358	subgrade	70	grating	157	medical	415
Stainless bar grating	158	Stall shower	502	gravel stop	248	Stiffener joist web	149
column cover	161	toilet	369, 371-373	gutter	250	plate	131
cooling tower	540	type urinal	503	hex bolt	123	Stiffleg derrick crane	701
duct	522	urinal	503	high strength	134	Stile fabric	304
flashing	246	Stamping slab	82	hinge	301	protection	304
gutter	250	texture	82	lath	320	Stockpiling of soil	597
plank grating	158	Standard extinguisher	382	lintel	130	Stone aggregate	648
reglet	251	Standing seam	245	locker	383	anchor	98
rivet	125	Standpipe alarm	591	louver door	311	ashlar	113
screen	370	connection	472	member structural	131	base	113, 631
sign	368	steel	658	mesh box	620	cast	116
steel corner guard	377	Starter board & switch	569, 570	mesh grating	158	column	113
steel cot	434	motor	571	mill extra	134	crushed	594
steel countertop	428	Station control	575	outlet box	557	cultured	117
steel cross	420	diaper	378	painting	362	curb cut	636
steel door	273	hospital	416	partition	375, 377	fill	594
steel door and frame	273	transfer	419	pile	624	filter	620
steel downspout	249	weather	459	pile concrete-filled	625	floor	114
steel gravel stop	248	Stationary ventilator	530	pile sheet	624	gabion retaining wall	644
steel hinge	301	ventilator mushroom	531	pipe	486, 661	ground cover	648
steel pipe	489	Steam bath	448	pipe corrugated	664	mulch	647
steel roof	245	bath residential	448	pipe removal	30	paver	113, 635
steel shelf	379	boiler	533, 534	plate	131	pea	51
steel storefront	284	boiler electric	533	prestressing	73	removal	30
weld rod	127	clean masonry	95	primer	362	retaining wall	644
Stair & walk moving	466	cleaner	698	project structural	133	river	51
basement	209	cleaning metal	120	purlin	134	sill	112, 115
basement bulkhead	84	condensate meter	521	register	529	simulated	117, 118
brick	112	humidifier	548	reinforcement	810	step	113

- stool 115
 toilet compartment 373
 tread 112
 trim cut 114
 wall 112, 644
 Stool cap 207
 doctor 417
 stone 115
 window 114, 115
 Stop door 207
 gravel 248
 Stop-start control station 575
 Storage bottle 404
 box 17
 cabinet 427
 dome 455
 dome bulk 455
 metal shelving food 404
 room cold 446
 shelving 385
 tank 516, 658
 tank concrete aboveground 518
 tank cover 448
 tank demo 442
 tank steel underground 516
 tank underground 516
 Storefront aluminum 284
 Storm door 261
 door residential 261
 drainage manhole frame 664
 drainage piping 661
 sash prefinished 454
 window 292
 window aluminum residential 292
 Stove 381, 406
 woodburning 381
 Strainer bronze body 519
 downspout 248
 gutter 251
 roof 248
 wire 249
 Y type bronze body 519
 Y type iron body 520
 Strand grouted 73
 ungrouted 73
 Stranded wire 554
 Strap tie 173
 Straw 646
 bale construction 457
 Street sign 368
 Streetlight 581
 Strength compressive 15
 Stressed skin roof 131
 Stringer stair 340
 stair terrazzo 340
 Strip cabinet 587
 chamfer 60
 entrance 281
 filler 304
 floor 336
 footing 76
 lighting 577
 rubble 672
 shingle 230
 soil 597
 Striper paint 699, 700
 Stripping topsoil 597
 Strobe light 580
 Structural aluminum 135
 backfill 608
 brick 102
 column 128
 compaction 619
 excavation 602
 fabrication cost 134
 facing tile 103
 fee 10
 framing 826
 insulated panel 188
 panel 188
 shape column 129
 steel 825
 steel member 131
 steel project 133
 tile 103
 welding 123, 133
 Structure fabric 449
 moving 38
 tension 450
 Stub switchboard 572
 Stucco 323
 demolition 315
 mesh 320
 painting 351
 wall coating 361
 Stud demolition 169
 metal 316
 NLB metal 318
 NLB steel 318
 NLB wall 318
 partition 183, 321
 partition framing load bearing 145
 wall 183, 187, 317
 wall blocking load-bearing 144
 wall box beam load-bearing 144
 wall bracing load-bearing 143
 wall framing load bearing 145
 wall header load-bearing 144
 wall wood 317
 welded 126
 wood 187, 316
 Stump chipper 694
 chipping 595
 removal 596
 Subcontractor O&P 13
 Subdrainage pipe 664
 system 664
 Subfloor 190
 adhesive 191
 plywood 190
 wood 191
 Subgrade reinforcing chair 69
 stake 70
 Submersible pump 498, 659, 697
 sump pump 498
 Subpurlin bulb tee 87
 bulbtee 135
 Subpurlins 828
 Subsoil heating 445
 Subsurface exploration 28
 Suction hose 697
 Sump hole construction 607
 pit 607
 pump 402, 497
 pump submersible 498
 Super high-tensile anchor 620
 Supermarket checkout 398
 scanner 398
 Supply ductile iron pipe water 655
 Support carrier fixture 505
 ceiling 127
 drinking fountain 505
 framing pipe 131
 lavatory 505
 light 128
 monitor 128
 motor 128
 partition 127
 sink 506
 urinal 506
 water closet 506
 water cooler 507
 X-ray 128
 Suppressor lightning 561
 Surface bonding 97
 landscape 343
 playground 338
 preparation exterior 347
 preparation interior 349
 raceway 573
 Surfacing 630
 Surfactant 43
 Surgery equipment 417
 table 416
 Surgical lighting 416
 Surround shower 373
 tub 374
 Surveillance system T.V. 590
 Survey aerial 28
 crew 24
 monument 28
 preblast 603
 property line 28
 stake 24
 topographic 28
 Suspended acoustic ceiling tile 331
 ceiling 320, 332
 ceiling framing 182
 Suspension mounted heater 536
 system ceiling 333
 Sweeper road 699
 Swell testing 15
 Swimming pool 443
 pool blanket 444
 pool demo 442
 pool enclosure 451
 pool equipment 444
 pool filter 509
 pool filtration 509
 pool heater 534
 pool hydraulic lift 444
 pool ladder 444
 pool painting 444
 pool ramp 444
 pools 839
 Swing 414
 check valve 480
 check valve bronze 480
 clear hinge 302
 gate 639
 staging 21
 Swing-up overhead door 280
 Switch box 557
 bus duct 572
 decorator 562
 dimmer 561, 574
 electric 573, 574
 general duty 574
 residential 561
 safety 574
 toggle 573
 Switchboard distribution 569
 electric 575
 feeder section 569
 incoming 568
 instrument 566
 pressure switch 569
 stub 572
 w/CT compartment 568
 Switching low-voltage 573
 Switchplate low-voltage 573
 Synthetic erosion control 619
 fiber 74
 fiber reinforcing 74
 marble 335
 turf 338
 System component foam-water 474
 control 515
 fire extinguishing 474
 grinder pump 496
 septic 660
 sprinkler 473, 474
 subdrainage 664
 tube 469
 T.V. 586
 T.V. surveillance 590
 UHF 586
 VHF 586

T

- Table folding 433
 laboratory 410
 massage 412
 overbed 435
 physical therapy 416
 reading 435
 rewind 409
 round 433
 saw 411
 surgery 416
 Tackboard fixed 366
 Tamper 599, 696
 Tamping soil 608
 Tandem roller 694
 Tank above ground steel 517
 abvgrnd. storage conc. 518
 clean 39
 cover 448
 darkroom 400
 developing 400
 disposal 39
 expansion 519
 fiberglass 516
 fixed roof 517
 gasoline 517
 holding 686
 horizontal above ground 517
 Hubbard 416
 leak detection 592
 pillow 658
 removal 39
 septic 660
 steel 519
 steel underground storage 516
 storage 516, 658
 testing 16
 water 658, 699
 water storage solar 537
 Tankless gas water heater 499
 Tap box bus duct 572
 Tape barricade 23
 detection 655
 sealant 258
 temporary 637
 underground 655
 Tar kettle 698, 700
 paper 647
 pitch emulsion 630
 roof 220
 Target range 414
 Tarpaulin 22, 23
 duck 22
 Mylar 23
 polyethylene 22
 polyvinyl 22
 Tarred felt 241
 Tax 12
 sales 12
 social security 12
 unemployment 12
 Taxes 794
 T-bar mount diffuser 529

- Teak floor 336
 molding 207
 paneling 208
 Technician inspection 16
 Tee cleanout 484
 pipe 488
 precast 85
 precast concrete beam 85
 Telephone enclosure 369
 enclosure commercial 369
 house 587
 manhole 667
 pole 666
 receptacle 564
 specialty 369
 Telescoping bleacher 436
 door 281
 platform 411
 Television equipment 586
 receptacle 564
 system 586
 Teller automatic 397
 window 397
 Temperature relief valve 481
 rise detector 591
 Tempered glass 307
 glass greenhouse 450
 hardboard 208
 Tempering valve 481
 valve water 481
 Temporary barricade 23
 building 17
 construction 16, 22
 electricity 16
 facility 23
 fence 24
 guardrail 23
 heat 16, 52
 light 16
 lighting 16
 power 16
 protection 25
 ramp 22
 road 22
 road painting 637
 shelter 52
 shoring 621
 tape 637
 toilet 698
 utility 16
 Tennis court air supported 449
 court backstop 640
 court clay 638
 court fence 640, 641
 court fence and gate 640
 court net 638
 court painting 638
 court post 638
 court sod 638
 court surfacing 638
 Tensile test 15
 Tension structure 450
 structure demo 443
 Terminal A/C packaged 542
 heater 544
 lug 553
 Termination box 587
 cable 553
 Termite control chemical 619
 protection 619
 Terne coated flashing 246
 Terra cotta 104
 cotta coping 104, 117
 cotta demolition 32, 316
 cotta tile 104
 Terrazzo 339
 abrasive 339
 base 339, 340
 conductive 341
 cove base 340
 curl 339, 340
 demolition 315
 epoxy 341
 floor 339, 838
 floor tile 340
 monolithic 339
 plastic matrix 340
 polyacrylate 341
 precast 340
 receptor 373
 riser 340
 stair 339
 venetian 339, 340
 wainscot 339, 340
 Test beam 15
 equipment laboratory 409
 load pile 594
 moisture content 16
 pile load 594
 pit 28
 soil 16
 ultrasonic 16
 well 659
 Testing 14
 lead 44
 OSHA 43
 pile 594
 sulfate soundness 15
 tank 16
 Textile wall covering 344
 Texture stamping 82
 Textured slab 77
 Theater and stage equipment 411
 Theatrical lighting 580
 Thermal & moist. protect. demo 220
 batt 346
 Thermometer 409
 Thermoplastic 310
 painting 637
 polyolefin roof 243
 polyolefin roofing 243
 Thermostat control sys. radiator 515
 integral 547
 wire 566
 Thickened edge slab 76
 Thimble wire rope 136
 Thin brick veneer 101
 plaster partition 317
 Thincoat plaster 324
 Thinning tree 595
 Thinset ceramic tile 328
 mortar 330
 Threaded rod fiberglass 215
 Threshold 301
 aluminum 301
 door 214
 stone 114
 wood 207
 Thru-wall air conditioner 542
 Ticket booth 456
 dispenser 394
 Tie back sheeting 623
 rafter 186
 railroad 631, 650
 rod 130, 621
 strap 173
 wall 98
 wire reinforcing 70
 Tier locker 383
 Tile 328, 331, 338
 abrasive 329
 aluminum 233, 331
 carpet 342
 ceiling 332
 ceramic 328
 clay 233
 concrete 233
 cork 338
 cork wall 344
 demolition 314
 exposed aggregate paver 634
 exterior 329
 fire rated 103
 floor 340
 flue 116
 glass 309, 330
 grout 328, 330
 marble 335
 metal 331
 or terrazzo base floor 340
 partition 104
 porcelain 329
 quany 330
 recycled rubber tire 431
 roof 233
 roof metal 233
 rubber 339
 slate 335
 stainless steel 331
 stair tread 330
 structural 103
 terra cotta 104
 vinyl 338
 wall 329
 waterproofing membr. ceram. 331
 window sill 330
 Tiling ceramic 328, 331
 Tilt-up concrete 821
 concrete wall panel 86
 precast concrete wall panel 86
 Timber connector 172
 fastener 171
 framing 189
 guide rail 672
 heavy 189
 laminated 193
 pile 625
 retaining wall 643
 switch tie 670
 switch tie railroad 670
 tie railroad 670
 Time lapse photography 14
 lock 279
 system controller 587
 Timer clock 565
 interval 562
 Tin ceiling 334
 clad door 269
 Tinted glass 307
 Toaster 406
 Toggle switch 573
 Toggle-bolt anchor 121
 Toilet 686
 accessory 378
 accessory commercial 378
 bowl 500
 chemical 698
 compartment 369
 compartment plastic 372
 compartment plastic-laminate 371
 compartment stone 373
 partition 114, 369, 371, 372
 partition removal 316
 prison 397
 stall 369, 371-373
 stone partition 373
 temporary 698
 tissue dispenser 379
 Tool powder actuated 125
 rivet 125
 small 22
 Toothed ring 173
 Toothing masonry 32
 Top coiling grille 276
 demolition counter 170
 dressing 647
 vanity 430
 Topographical survey 28
 Topping concrete 88
 epoxy 342
 floor 81, 88
 grout 88
 Topsoil 594, 597
 placement and grading 647
 stripping 597
 Torch cutting 122, 698
 cutting demolition 35
 Touch bar 298
 Towel bar 379
 dispenser 378
 Tower control 457
 cooling 540
 crane 18, 700, 802
 hoist 701
 light 697
 radio 667
 TPO roof 243
 Track accessory 670
 accessory railroad 670
 curtain 411
 drawer 426
 drill 695
 heavy rail railroad 670
 material 670
 running 337
 traverse 422
 Tractor 608
 loader 694
 rake 694
 truck 698
 Traffic barriers, highway sound 645
 channelizing 672
 cone 23
 control pedestrian 396
 door 281
 line 637
 line remover 700
 sign 369
 signal system 671
 Trailer bunk house 17
 floodlight 696
 lowbed 700
 mud 699
 office 17
 platform 698
 truck 698
 water 698
 Trainer bicycle 412
 Tram car 698
 Transceiver 586
 Transfer station 419
 Transformer 567
 & bus duct 568, 572
 cabinet 573
 current 566
 dry-type 568
 fused potential 566
 low-voltage 573
 oil-filled 567
 Transition molding wood 336
 residential 527
 strip floor 342
 Transom aluminum 284
 lite frame 263

- window 291
 Transplanting plant and bulb 651
 Trap cast iron 494
 deep seal 494
 drainage 494
 grease 495
 inverted bucket steam 519
 rock surface 81
 steam 519
 Trash closure 437
 compacto 408
 pump 698
 receiver 430
 receptacle 437
 receptacle fiberglass 437
 receptacle metal 431
 Travel nursery item 648
 Traverse 422
 track 422
 Travertine 114
 Tray cable 559
 Tread abrasive 330
 and riser stair 337
 bar grating 160
 channel grating 160
 cover renovation 160
 diamond plate 159
 insert stair 62
 rubber 337
 stair 112, 159, 337
 stair pan 80
 stone 114, 115
 vinyl 337
 wood stair 211
 Treadmill 412
 Treated lumber 186
 lumber framing 187
 pile 625
 pine fence 642
 Treatment acoustical 346
 equipment 416
 plant secondary 686
 plant sewage 686
 potable water 498
 Tree deciduous 649
 evergreen 648
 guying system 650
 moving 651
 removal 595, 596
 removal selective 596
 spade 695
 thinning 595
 Trench backfill 599, 601
 box 698
 cover 159
 disposal field 660
 drain 497
 drain fiberglass 497
 drain plastic 497
 drain polymer 497
 duct 559
 duct fitting 560
 duct steel 560
 excavating 598
 excavation 598, 601
 grating frame 159
 slurry 623
 utility 601
 Trencher chain 601, 695
 rock 695
 wheel 695
 Trenching 602, 607
 Trial batch 15
 Trim demolition 170
 exterior 200, 201
 exterior paint 353
 molding 206
 painting 357
 PVC 217
 tile 329
 wood 203
 Triple weight hinge 302
 Tripod floodlight 696
 Troffer air handling 577
 light fixture 578
 Trolley rail 378
 Trowel coating 222
 concrete 692
 power 692
 Truck boom 700
 concrete 692
 crane flatbed 700
 dock 395
 dump 695
 flatbed 695, 698
 holding concrete 78
 leveler 395
 loading 602
 mounted crane 700
 pickup 698
 scale 390
 tractor 698
 trailer 698
 vacuum 699
 winch 699
 Truss bowstring 194
 demolition 170
 framing metal 153
 joist 141
 metal roof 133
 painting 358
 plate 173
 roof 193, 194
 stain 358
 varnish 358
 Tub bar 378
 rough-in 502
 soaking 502
 surround 374
 Tube framing 282
 pneumatic 397
 system 469
 system air 469
 system pneumatic 469
 Tubing copper 486
 electric metallic 557
 electrical 556
 fitting PEX 546
 PEX 490, 546
 Tubular fence 641
 lock 299
 scaffolding 18
 Tugboat diesel 702
 Tumbler holder 379
 Tunnel locomotive 700
 muck car 700
 ventilator 700
 Turbine wind 688
 Turf artificial 638
 synthetic 338
 Turnbuckle wire rope 137
 Turndown slab 76
 Turned column 212
 Turnout railroad 673
 Turnstile 396
 security 396
 T.V. closed circuit camera 590
 system 586
 Two piece astragal 304
 Tying wire 61
 Tyton joint 655
- ## U
- UHF system 586
 Ultrasonic cleaner 417
 motion detector 590
 test 16
 Uncased drilled concrete pier 628
 Underdrain 664
 Undereave vent 312
 Underfloor duct 560
 duct electrical 560
 duct fitting 560
 Underground duct 667
 electrical & telephone 667
 sprinkler 645
 storage tank 516
 storage tank removal 804
 storage tank steel 516
 tape 655
 Underlayment acoustical 347
 gym floor 337
 hardboard 191
 latex 337
 self-leveling cement 88
 Underpin foundation 622
 Underwater light 444
 Undisturbed soil 15
 Unemployment tax 12
 UngROUTed bar 73
 strand 73
 Unit air-handling 540, 543
 commercial kitchen 400
 heater 536, 544
 heater propeller 545
 Upstanding beam formwork 53
 Urethane foam 346
 insulation 446
 wall coating 362
 Urinal 503
 high efficiency 505
 removal 479
 screen 373
 stall type 503
 support 506
 wall hung 503
 waterless 503
 watersaving 503
 Urn ash 430
 Utensil washer medical 415
 washer-sanitizer 410
 Utility accessory 655
 box 654
 brick 102
 duct 667
 electric 667
 pole 580, 666
 pole wood electrical 666
 set fan 525, 526
 sitework 667
 temporary 16
 trench 601
 trench excavating 601
- ## V
- Vacuum breaker 492
 catch basin 699
 central 399
 cleaning 399
 loader 41
 pick-up 692
 truck 699
 unit central 682
 wet/dry 699
 Valance board 425
 Valley flashing 231
 gutter 453
 rafter 186
 Valve 479, 481, 512, 513
 assembly sprinkler deluge 474
 backwater 496
 ball 482
 brass 479
 bronze 479
 butterfly 512, 656
 cabinet 382
 check 472, 513
 check swing 513
 CPVC 482
 fire hose 473
 flush 505
 foot 482
 forged 513
 gas stop 479
 gate 512, 513
 globe 513
 heating control 519
 hot water radiator 519
 iron body 512
 mixing 503
 plastic 481
 polypropylene 482
 PVC 481
 relief pressure 481
 shower by-pass 503
 soldered gate 480
 spout set shower-tub 503
 sprinkler alarm 472
 steam pressure 519
 steel 513
 swing check 480
 tempering 481
 water pressure 481
 Y sediment strainer 482
 Vandalproof fixture 578
 Vaneaxial fan 525
 Vanity base 426
 top 430
 top lavatory 501
 Vapor barrier 230, 446
 barrier sheathing 192
 retarder 230
 Vaportight fixture incandescent 578
 Varnish cabinet 354
 casework 354
 door 354
 floor 357, 360
 polyurethane 362
 truss 358
 VAT removal 42
 Vault day gate demolition 392
 door 279
 front 279
 Vaulting side horse 412
 VCT removal 315
 Vehicle barrier security 671
 charging electric 575
 guide rail 672
 Veneer ashlar 112
 brick 100
 core paneling 208
 granite 112
 member laminated 194
 removal 96
 Venetian plaster 323
 Terrazzo 339, 340
 Vent automatic air 518
 box 99
 brick 530
 chimney 532
 chimney all fuel 532

- convector or baseboard air . . . 545
 - dryer 402
 - exhaust 530
 - flashing 495
 - foundation 99
 - gas 532
 - intake-exhaust 531
 - metal chimney 532
 - one-way 253
 - ridge 252
 - ridge strip 312
 - roof 252, 454
 - smoke 253
 - soffit 312
 - Ventilated metal deck 143
 - Ventilating air conditioning . . 515, 522, 523, 525, 526, 531, 539, 540, 542
 - Ventilation 844
 - equipment and hood 531
 - fan 565
 - louver 312
 - Ventilator control system 515
 - fan 525
 - masonry 99
 - mushroom stationary 531
 - relief vent 531
 - roof 253
 - spinner 530
 - stationary mushroom 531
 - tunnel 700
 - Venturi flow meter 520
 - Verge board 205
 - Vermiculite cement 254
 - insulation 226
 - plaster 322
 - Vertical blind 422
 - lift door 281
 - metal ladder 155
 - Very low density polyethylene . . 38
 - VHF system 586
 - Vials and bottles 47
 - Vibrating screed, gas engine, . . 692
 - 8HP 692
 - Vibration pad 126
 - Vibrator concrete 692
 - earth 599, 608, 619
 - plate 608
 - plow 695
 - Vibratory hammer 694
 - roller 694
 - Vibroflotation 622
 - compaction 853
 - Video surveillance 591
 - Videotape recorder 591
 - Vinyl blind 214, 422
 - casement window 294
 - clad premium window 291
 - coated fence 640
 - composition floor 338
 - curtain 378
 - downspout 249
 - faced wallboard 325
 - floor 339
 - gutter 250
 - lead barrier 347
 - picture window 294
 - sheet floor 338
 - siding 238
 - stair riser 338
 - stair tread 338
 - tile 338
 - tread 337
 - wall coating 362
 - wallpaper 345
 - window 292, 293
 - window double hung 293
 - window single hung 292
 - Vision panel 295
 - Vocational kiln 410
 - shop equipment 410
 - Voltmeter 566
 - Volume-control damper 523
- W**
- Waffle slab 75
 - Wainscot ceramic tile 329
 - molding 207
 - quarry tile 330
 - terrazzo 339, 340
 - Wales 621
 - sheeting 621
 - Walk 630
 - moving 467
 - Walk-in refrigeration 446
 - Walkway cover 387
 - roof 242
 - Wall & corner guard 377
 - accessory formwork 62
 - aluminum 236
 - and partition demolition 315
 - base 337
 - blocking load-bearing stud 144
 - box beam load-bearing stud 144
 - boxout formwork 57
 - bracing load-bearing stud 143
 - brick 111
 - brick shelf formwork 57
 - bulkhead formwork 57
 - bumper 300, 378
 - buttress formwork 57
 - cabinet 425, 427, 428
 - canopy 387
 - cap residential 527
 - cast concrete retaining 642
 - cavity 111
 - ceramic tile 329
 - clock 431
 - coating 361
 - concrete 76
 - concrete finishing 81
 - concrete placement 79
 - concrete segmental retaining . . . 643
 - corbel formwork 57
 - covering 838
 - covering textile 344
 - cross 420
 - curtain 285
 - cutout 32
 - demolition 315
 - drywall 324
 - exhaust fan 526
 - fan 527
 - finish 344
 - flagpole 389
 - forms 806
 - formwork 57
 - foundation 107
 - framing 187
 - framing load-bearing stud 145
 - framing removal 32
 - furnace 536
 - furring 187, 318
 - grout 98
 - guard 377, 378
 - header load-bearing stud 144
 - heater 402
 - hung lavatory 501
 - hung urinal 503
 - hydrant 493
 - insulation 224, 453
 - lath 320
 - lintel formwork 58
 - louver 312
 - masonry 105, 644
 - mat 413
 - mirror 309, 310
 - NLB partition 316
 - painting 351, 359
 - panel 116
 - panel brick 111
 - panel precast 86
 - panel precast concrete double . . 85
 - panel woven wire 374
 - paneling 208
 - partition 316
 - pilaster formwork 58
 - plaster 322
 - plug 99
 - plywood formwork 57
 - precast concrete 86, 821
 - prefab plywood formwork 58
 - register 529
 - reinforcing 71, 810
 - retaining 77, 644
 - rubbing 81
 - screen 376
 - shaft 316
 - shear 192
 - sheathing 192
 - sill formwork 58
 - steel bin 643
 - steel framed formwork 58
 - stone 112, 644
 - stone gabion retaining 644
 - stucco 323
 - stud 183, 187, 316, 317
 - stud NLB 318
 - switch plate 574
 - tie 98
 - tie masonry 98
 - tile 329
 - tile cork 344
 - urn ash receiver 379
 - window 283, 285
 - wood stud 317
 - Wallboard repair gypsum 314
 - Wallcovering 344
 - acrylic 345
 - gypsum fabric 345
 - Wall-covering natural fiber 344
 - Wallguard 378
 - Wallpaper 345, 838
 - grass cloth 345
 - vinyl 345
 - Walnut floor 336
 - Wardrobe 385
 - cabinet 385
 - wood 426
 - Warehouse 449
 - scale 390
 - Warm air heater 535
 - Wash bowl residential 501
 - brick 95
 - fountain 505
 - fountain group 505
 - pressure 348
 - safety equipment eye face 508
 - Washable air filter 531
 - air filter permanent 531
 - Washer 173
 - & dryer coin-operated 399
 - and extractor 399
 - commercial 399
 - darkroom 400
 - pressure 697
 - residential 402
 - Washer-sanitizer utensil 410
 - Washing machine automatic 402
 - Waste cleanup hazardous 40
 - compactor 419
 - disposal 45, 419
 - disposal hazardous 40
 - handling 418
 - handling equipment 418
 - incinerator 418
 - packaging 43
 - receptacle 379
 - Wastewater treatment system . . . 686
 - Watchdog 24
 - Watchman service 24
 - Water atomizer 41
 - balancing 514
 - blasting 95
 - blasting metal 120
 - cement ratio 15
 - chiller 538
 - chiller absorption 538
 - chiller centrifugal type 538
 - chiller indirect-fired 538
 - chiller reciprocating 538
 - chiller screw 539
 - chiller scroll 539
 - closet 500, 504
 - closet chemical 686
 - closet removal 479
 - closet support 506, 507
 - coil chilled 543
 - cooler 509, 843
 - cooler electric 509
 - cooler handicap 509
 - cooler support 507
 - copper tubing connector 491
 - curing concrete 83
 - dispenser hot 498
 - distiller 416
 - distribution pipe 655, 656
 - effect testing 15
 - fountain removal 479
 - hammer arrester 493
 - heater 402, 566
 - heater commercial 499, 500
 - heater gas 499
 - heater gas residential 499
 - heater oil-fired 500
 - heater removal 479
 - heater residential 402, 499, 566
 - heater residential electric 498
 - heating hot 533, 544
 - hose 697
 - hydrant 493
 - pipe 655
 - pipe ground clamp 556
 - pressure reducing valve 481
 - pressure relief valve 481
 - pressure valve 481
 - pump 520, 659, 697
 - pump fire 475
 - pump fountain 509
 - pumping 607
 - reducer concrete 78
 - repellent 359
 - repellent coating 224
 - repellent silicone 224
 - softener 498
 - softener potable 498
 - softener removal 479
 - source heat pump 543
 - storage solar tank 537
 - supply domestic meter 491
 - supply ductile iron pipe 655
 - supply meter 491
 - supply PVC pipe 656

- supply well pump 659
- tank 658, 699
- tank elevated 658
- tank ground level steel 658
- tempering valve 181
- trailer 698
- treatment 686
- well 659
- Waterless urinal 503
- Waterproofing 223
 - butyl 223
 - cementitious 223
 - coating 222
 - demolition 222
 - elastomeric 223
 - elastomeric sheet 223
 - integral 52
 - masonry 97
 - membrane 222
 - neoprene 223
 - rubber 223
- Watersaving urinal 503
- Waterstop center bulb 63
 - dumbbell 62
 - fitting 63
 - PVC 62
 - ribbed 62
 - rubber 63
- Water-water exchange hot 537
- Watt meter 566
- Wearing course 632
- Weather barrier or wrap 230
 - station 459
- Weatherproof receptacle 563
- Weatherstrip 277
 - aluminum 304
 - door 305
 - spring bronze 304
 - window 306
 - zinc 305
- Weatherstripping 305
- Web stiffener framing 149
- Wedge anchor 122
- Weight exercise 412
 - lifting multi station 412
- Weights and measures 791
- Weld joint pipe 487
 - rod 127
 - rod aluminum 127
 - rod cast-iron 127
 - rod stainless 127
 - rod steel 127
- Welded frame 262
 - shear connector 126
 - structural steel 824
 - stud 126
 - wire epoxy 73
 - wire fabric 73, 811
 - wire galvanized 73
- Welder arc 411
- Welding certification 16
 - fillet 123
 - machine 699
 - structural 123, 133
- Well 607
 - & accessory 659
 - area window 388
 - casing steel 659
 - grave pick 659
 - pump 659
 - pump shallow 659
 - water 659
- Wellpoint 607
 - discharge pipe 701
 - equipment rental 701
 - header pipe 701
 - pump 701
 - riser pipe 702
- Wellpoints 852
- Wet/dry vacuum 699
- Wheel color 580
 - guard 377
 - potters 410
 - stop railroad 670
 - trencher 695
- Wheelbarrow 699
- Wheelchair lift 467
- stairlift 467
- Wheeled loader 694
- Whirler playground 414
- Whirlpool bath 416, 445
- Wide flange beam fiberglass 215
 - throw hinge 302
- Widener pavement 699
- Winch truck 699
- Wind turbine 688
- Window 286
 - & door demolition 260
 - aluminum 286
 - aluminum awning 286
 - aluminum projected 286
 - aluminum residential storm 292
 - aluminum sliding 286
 - and door molding 207
 - awning 288, 386
 - bank 397
 - basement/utility 287
 - blind 422
 - bow & bay metal-clad 290
 - bullet resistant 397
 - casement 286-288, 290
 - casement wood 288
 - demolition 260
 - double hung 291
 - double hung aluminum sash 286
 - double hung bay wood 290
 - double hung steel sash 287
 - double hung vinyl 293
 - double hung wood 288
 - drive-up 397
 - estimates 833
 - fiberglass 295
 - fiberglass single hung 295
 - frame 289
 - framing 453
 - glass 309
 - grille 292
 - guard 162
 - hardware 296
 - industrial 287
 - metal 286, 287, 454
 - metal-clad awning 289
 - metal-clad casement 289
 - metal-clad double hung 289
 - muntin 292
 - painting 355
 - pulladian 291
 - picture 288
 - picture & sliding metal-clad 290
 - pivoted 287
 - plastic 292
 - precast concrete sill 87
 - removal 260
 - restoration 45
 - sash wood 289
 - screen 287, 292
 - sill 115
 - sill marble 114
 - sill tile 330
 - single hung aluminum 286
 - single hung aluminum sash 286
 - single hung vinyl 292
 - sliding 289
 - sliding wood 289
 - steel 287, 454
 - steel projected 287
 - steel sash picture 287
 - steel sash projected 287
 - stool 114, 115
 - storm 292
 - teller 397
 - transom 291
 - trim set 207
 - vinyl 292, 293
 - vinyl casement 294
 - vinyl-clad awning 291
 - vinyl-clad premium 291
 - vinyl picture 294
 - wall 283
 - wall aluminum 283
 - wall framing 282
 - weatherstrip 306
 - well area 388
 - wood 288
 - wood awning 288
 - wood bow 290
 - wood double hung 288
- Window loader 700
- Wine cellar 404
- Winter concrete 78
 - protection 23, 52
- Wire 848
 - brushing metal 120
 - connector 553
 - copper 554, 555
 - electrical 554
 - fabric welded 73
 - fence 24, 641
 - fencing 641
 - glass 309
 - ground 556
 - hanging 333
 - mesh 323, 641
 - mesh locker 383
 - mesh partition 374
 - partition 374
 - razor 641
 - reinforcement 811
 - rope clip 136
 - rope socket 136
 - rope thimble 136
 - rope turnbuckle 137
 - strainer 249
 - stranded 554
 - thermostat 566
 - THW 554
 - THWN-THHN 555
 - tying 61
- Wiremold raceway 573
- Wireway 558
- Wiring air conditioner 566
 - device 558, 573
 - device & box 558
 - fan 565
 - method 568
 - power 574
 - residential 561, 565
- Wood & composite I-joist 193
 - awning window 288
 - ballistic door 278
 - base 196
 - beam 181, 189
 - bench 437
 - blind 423
 - block floor 335
 - block floor demolition 315
 - blocking 180, 184
 - bow window 290
- bracing 180
- bridge 644
- cabinet school 427
- canopy 186
- case goods 432
- casework frame 425
- chip 647
- column 182, 189, 212
- composition floor 336
- cupola 387
- cutting 34
- deck 190
- demolition 314
- dome 455
- door 266, 267, 269
- door frame exterior 213
- door frame interior 213
- door residential 270
- double acting swing door 282
- double hung window 288
- drawer 426
- drawer front 426
- electrical utility pole 666
- fascia 186, 203
- fastener 171
- fiber formboard 59
- fiber plank cementitious 87
- fiber sheathing 192
- fiber underlayment 191
- firestop 183
- flagpole 389
- floor 335, 336
- floor demolition 315
- folding panel 423
- folding partition 376
- frame 425
- framing 180-183, 186, 187, 189
- framing demolition 166
- framing miscellaneous 183
- framing open web joist 182
- framing plate 187
- furring 187
- girder 181
- gutter 250
- handrail 206, 211
- header 187
- interior shutter 423
- joist 182, 193
- laminated 193
- ledger 186
- louver 212
- nailer 183
- overhead door 280
- panel door 270
- paneling 208
- parking bumper 637
- parquet 336
- partition 183
- piers floating 676
- piles 625
- plank scaffold 19, 21
- planter 437
- plate 187
- pole 666
- rafter 185, 186
- rail fence 642
- railing 206, 209, 211
- roof deck 190
- roof truss 193
- sash 289
- screen 292
- screw 171
- security driveway gate 278
- shade 424
- shake 232
- sheet piling 853

sheeting 607, 621, 853
 shelving 386
 shingle 231
 shutter 214
 sidewalk 630
 siding 237
 siding demolition 222
 sill 186
 sleeper 186
 soffit 207
 soffit framing 186
 stair 209
 stair baluster 209
 stair newel 210
 stair part 209
 stair railing 210
 stair riser 210
 stair stringer 183
 stair tread 211
 storm door 273

stud 187, 316
 subfloor 191
 threshold 207
 trim 203
 veneer wallpaper 345
 wardrobe 426
 window 288
 window casement 288
 window demolition 260
 window double hung bay 290
 window sash 289
 window sliding 289
 Woodburning stove 381
 Wool carpet 343
 fiberglass 226
 Work boat 702
 extra 13
 Worker protection 41
 Workers compensation 12, 796-799
 Woven wire partition 374

Wrapping pipe 654
 Wrecking ball 699
 Wrench impact 696
 Wrestling mat 413

X

X-ray barrier 459
 concrete slab 16
 dental 417
 equipment 418, 590
 equipment security 590
 machine 590
 medical 418
 mobile 418
 protection 458
 support 128
 X-ray/radio freq. protect. demo ... 443

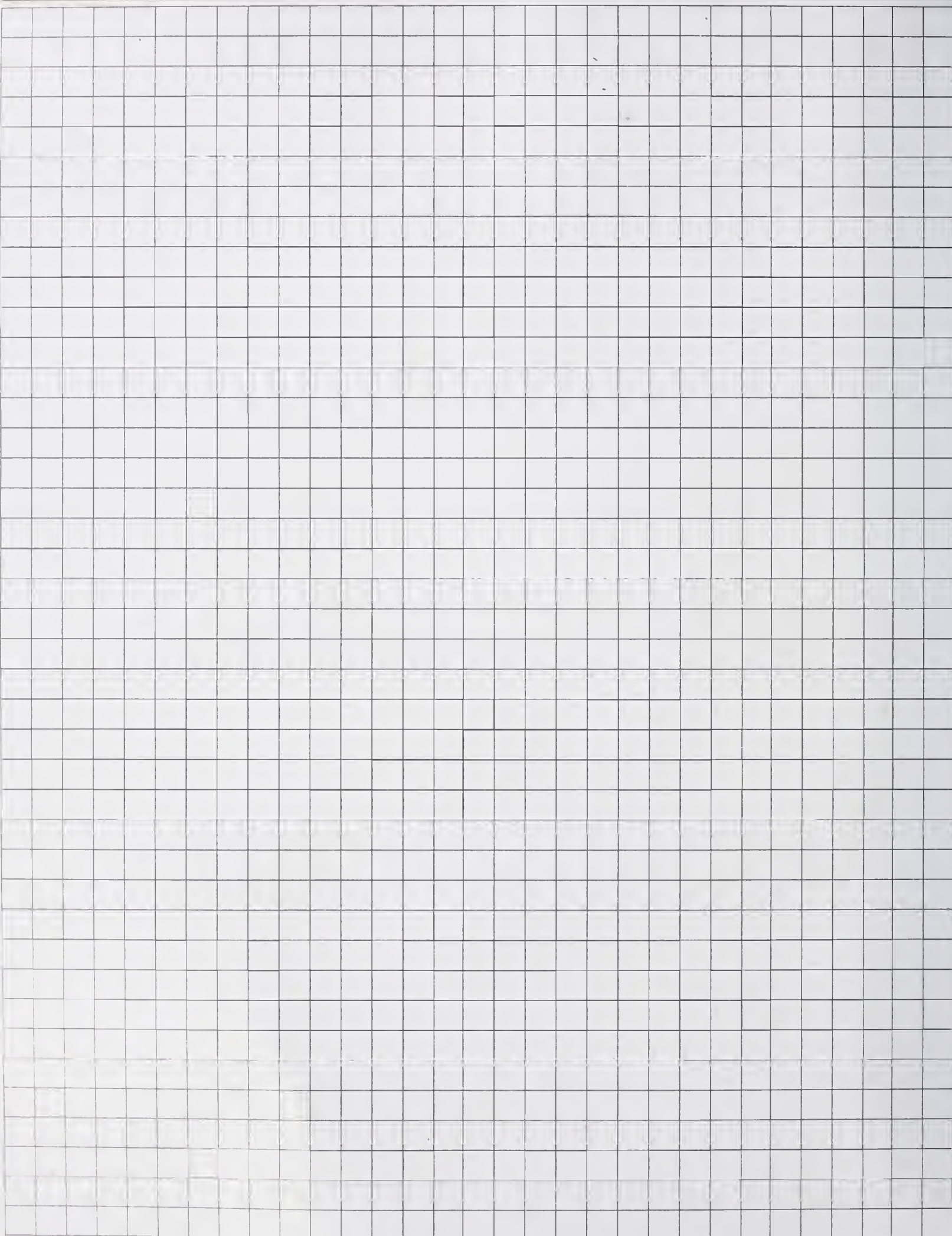
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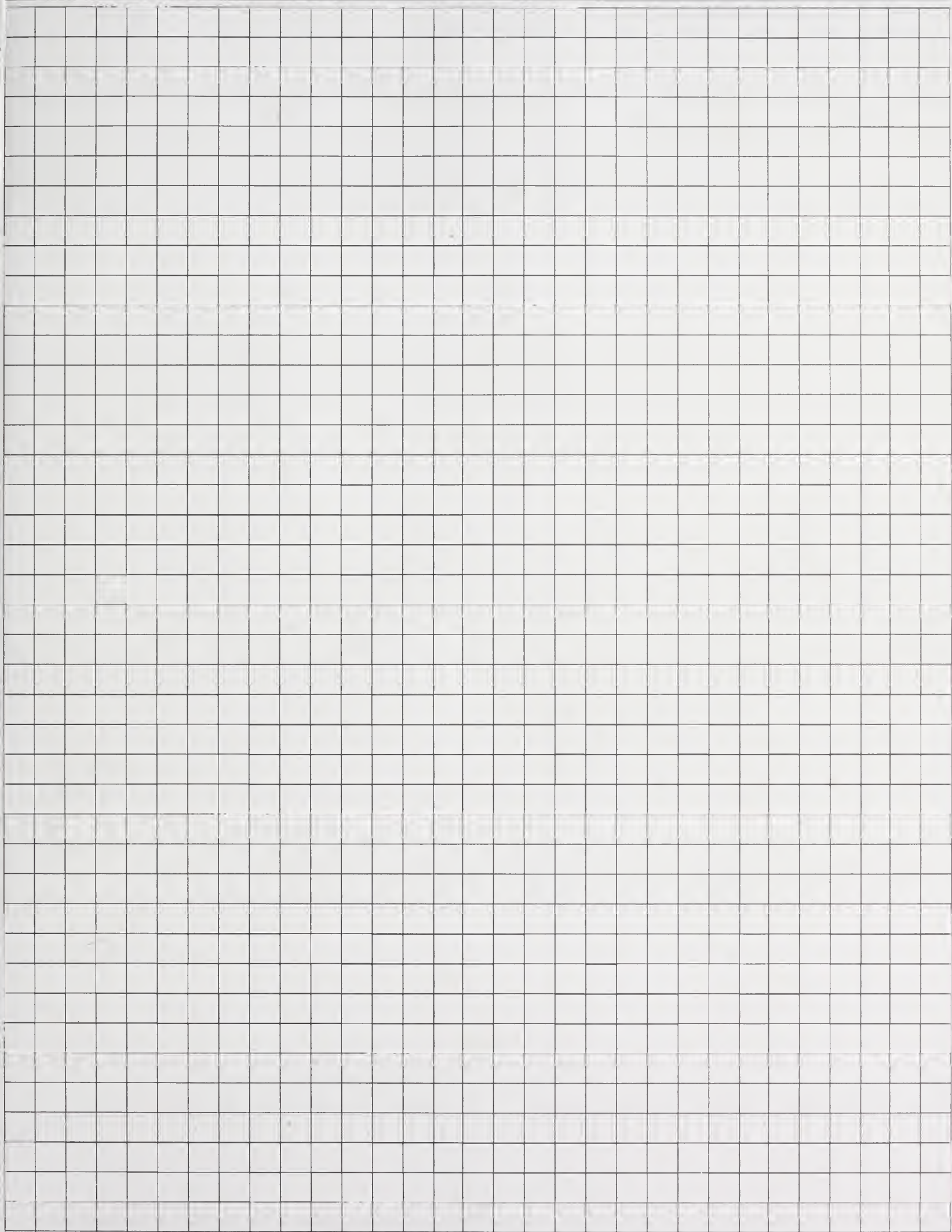
Y sediment strainer valve 482
 type bronze body strainer 519
 type iron body strainer 520
 Yellow pine floor 336

Z

Z bar suspension 333
 Zee bar 328
 Zinc divider strip 339
 plating 171
 roof 245
 terrazzo strip 339
 weatherstrip 305









Division Notes

[illegible]

Division Notes

[illegible]

Division Notes

[illegible]

Division Notes

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Book Selection Guide The following table provides definitive information on the content of each cost data publication. The number of lines of data provided in each unit price or assemblies division, as well as the number of reference tables and crews, is listed for each book. The presence of other elements such as equipment rental costs, historical cost indexes, city cost indexes, square foot models, or cross-referenced indexes is also indicated. You can use the table to help select the RSMeans book that has the quantity and type of information you most need in your work.

Unit Cost Divisions	Building Construction	Mechanical	Electrical	Commercial Renovation	Square Foot	Site Work Landsc.	Green Building	Interior	Concrete Masonry	Open Shop	Heavy Construction	Light Commercial	Facilities Construction	Plumbing	Residential
1	582	395	411	508		521	196	319	463	581	511	244	1054	411	180
2	789	279	85	741		1005	180	399	222	788	746	481	1233	289	257
3	1689	347	231	1087		1477	995	329	2040	1688	1685	479	1787	317	385
4	963	21	0	932		729	179	620	1159	931	621	521	1176	0	435
5	1873	158	155	1068		811	1779	1073	716	1873	1034	954	1874	204	723
6	2404	18	18	2062		110	560	1523	278	2400	126	2085	2076	22	2612
7	1531	215	128	1569		584	747	516	509	1528	26	1282	1633	227	1018
8	2107	81	45	2530		268	1140	1768	112	2093	0	2109	2842	0	1511
9	1929	72	26	1726		313	449	2014	387	1870	15	1644	2179	54	1430
10	1006	17	10	623		215	27	818	158	1006	29	511	1098	235	224
11	1026	208	165	489		126	54	878	28	1010	0	230	1046	169	110
12	557	0	2	327		248	151	1669	12	545	19	364	1718	23	317
13	729	117	114	246		347	128	253	66	728	253	82	756	71	80
14	277	36	0	224		0	0	261	0	277	0	12	297	16	6
21	90	0	16	37		0	0	250	0	87	0	68	427	432	220
22	1159	7329	156	1170		1578	1099	849	20	1123	1687	861	7171	9082	712
23	1182	6901	586	886		160	898	741	38	1106	111	759	5013	1830	434
26	1379	499	10134	1039		816	661	1142	55	1351	562	1305	10083	444	621
27	72	0	298	34		13	0	60	0	72	39	52	280	0	4
28	97	58	137	72		0	21	79	0	100	0	41	152	44	26
31	1498	735	610	803		3206	289	7	1208	1443	3285	600	1560	660	611
32	782	54	8	859		4396	352	362	286	753	1824	407	1660	166	455
33	509	1020	542	209		2036	41	0	231	508	2024	120	1585	1211	118
34	109	0	47	4		192	0	0	31	64	195	0	130	0	0
35	18	0	0	0		327	0	0	0	18	442	0	83	0	0
41	60	0	0	32		0	0	22	0	60	30	0	67	14	0
44	75	83	0	0		0	0	0	0	0	0	0	75	75	0
46	23	16	0	0		274	151	0	0	23	264	0	33	33	0
48	12	0	27	0		0	27	0	0	12	19	12	12	0	12
Totals	24527	18659	13951	19277		19752	10124	15952	8019	24038	15547	15223	49100	16029	12501

Assem Div	Building Construction	Mechanical	Electrical	Commercial Renovation	Square Foot	Site Work Landscape	Assemblies	Green Building	Interior	Concrete Masonry	Heavy Construction	Light Commercial	Facilities Construction	Plumbing	Asm Div	Residential
A		15	0	188	150	577	598	0	0	536	571	154	24	0	1	368
B		0	0	848	2498	0	5658	56	329	1975	368	2089	174	0	2	211
C		0	0	647	872	0	1251	0	1576	146	0	762	249	0	3	588
D		1067	943	712	1856	72	2532	330	822	0	0	1342	1106	1081	4	851
E		0	0	86	260	0	300	0	5	0	0	257	5	0	5	392
F		0	0	0	114	0	114	0	0	0	0	114	3	0	6	357
G		522	442	318	262	3740	663	0	0	534	1558	199	288	758	7	307
															8	760
															9	80
															10	0
															11	0
															12	0
Totals		1604	1385	2799	6012	4389	11116	386	2732	3191	2497	4917	1849	1839		3914

Reference Section	Building Construction Costs	Mechanical	Electrical	Commercial Renovation	Square Foot	Site Work Landscape	Assem.	Green Building	Interior	Concrete Masonry	Open Shop	Heavy Construction	Light Commercial	Facilities Construction	Plumbing	Resi.
Reference Tables	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Models					111			25					50			28
Crews	561	561	561	540		561		558	561	561	538	561	538	540	561	538
Equipment Rental Costs	yes	yes	yes	yes		yes		yes	yes	yes	yes	yes	yes	yes	yes	yes
Historical Cost Indexes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
City Cost Indexes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

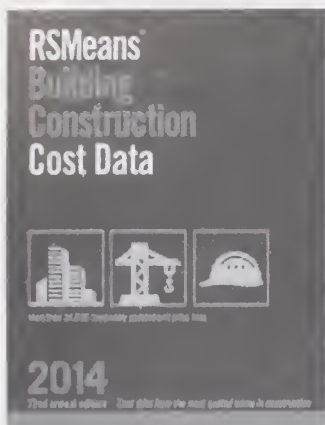
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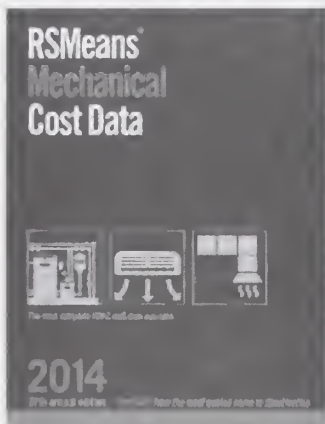
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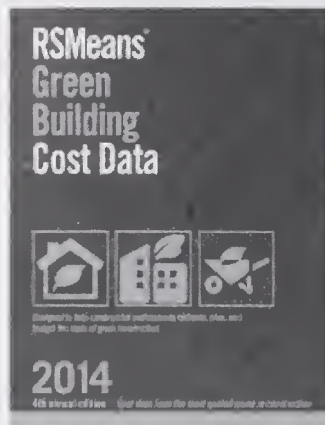
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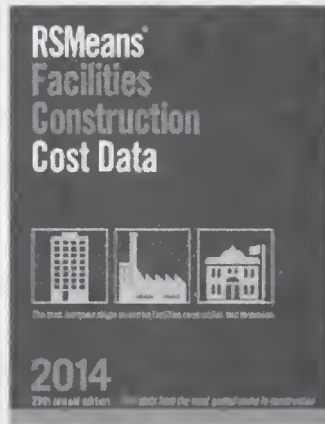
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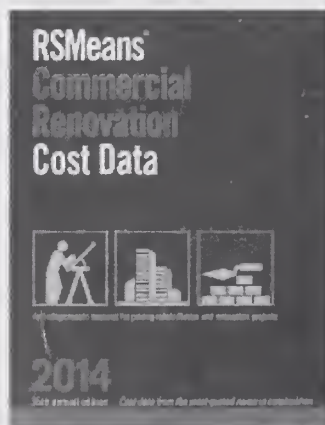
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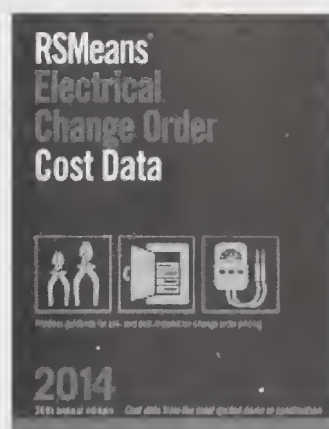


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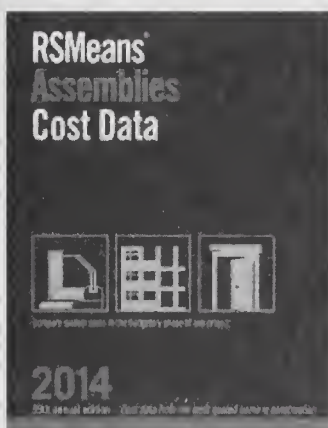
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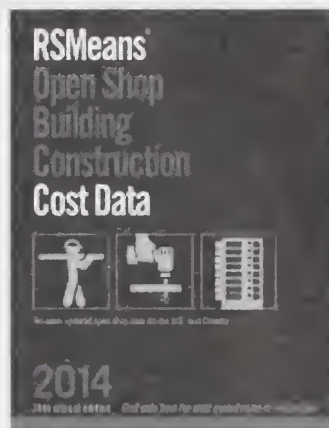
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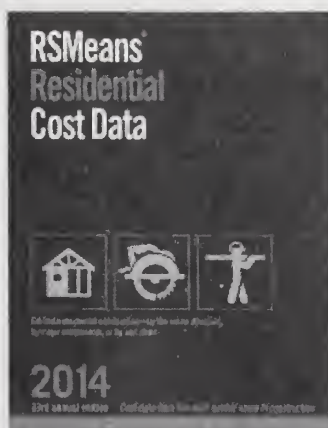
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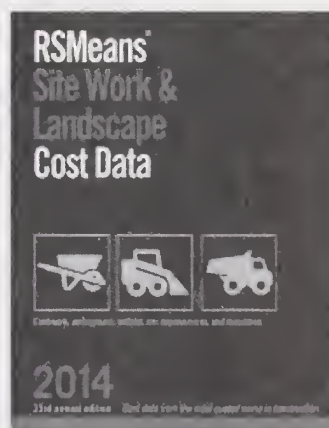


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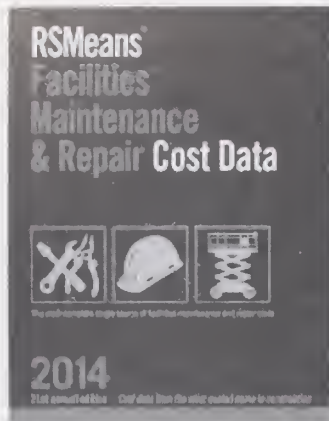
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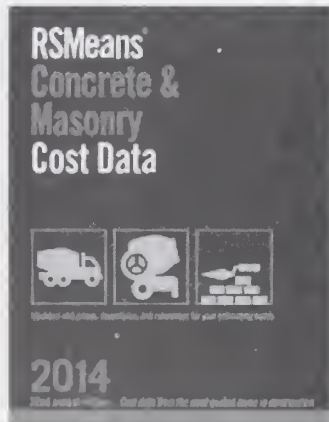


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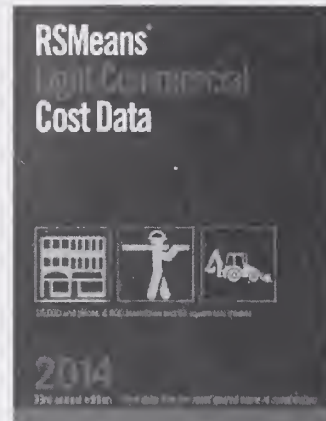


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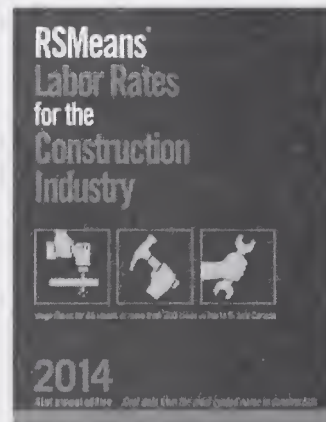
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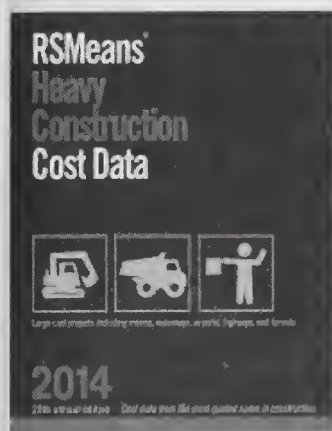
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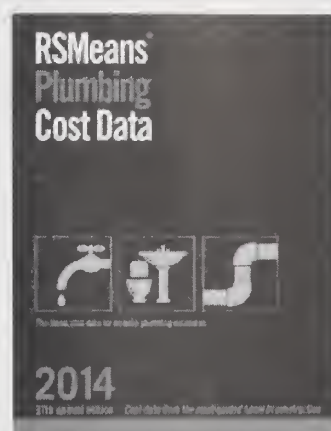
Unit prices according to the latest MasterFormat

RSMeans Heavy Construction Cost Data 2014



A comprehensive guide to heavy construction costs. Includes costs for highly specialized projects such as tunnels, dams, highways, airports, and waterways. Information on labor rates, equipment, and materials costs is included. Features unit price costs, systems costs, and numerous reference tables for costs and design.

RSMeans Plumbing Cost Data 2014



Comprehensive unit prices and assemblies for plumbing, irrigation systems, commercial and residential fire protection, point-of-use water heaters, and the latest approved materials. This publication and its companion, *RSMeans Mechanical Cost Data*, provide full-range cost estimating coverage for all the mechanical trades.

Now contains updated costs for potable water and radiant heat systems and high efficiency fixtures.

\$192.95 | Available Dec. 2013 | Catalog no. 60164

\$194.95 | Available Oct. 2013 | Catalog no. 60214

2014 RSMeans Seminar Schedule

Note: call for exact dates and details.

Location	Dates	Location	Dates
Seattle, WA	January and August	Jacksonville FL	September
Dallas/Ft. Worth, TX	January	Dallas, TX	September
Austin, TX	February	Charleston, SC	October
Anchorage, AK	March and September	Houston, TX	October
Las Vegas, NV	March and October	Atlanta, GA	November
Washington, DC	April and September	Baltimore, MD	November
Phoenix, AZ	April	Orlando, FL	November
Kansas City, MO	April	San Diego, CA	December
Toronto	May	San Antonio, TX	December
Denver, CO	May	Raleigh, NC	December
San Francisco, CA	June		
Bethesda, MD	June		
Columbus, GA	June		
El Segundo, CA	August		

1-800-334-3509, Press 1

Professional Development

For more information visit the RSMeans website at www.rsmeans.com

eLearning Training Sessions

Learn how to use *RSMeans Online™* or *RSMeans CostWorks®* CD from the convenience of your home or office. Our eLearning training sessions let you join a training conference call and share the instructors' desktops, so you can view the presentation and step-by-step instructions on your own computer screen. The live webinars are held from 9 a.m. to 4 p.m. eastern standard time, with a one-hour break for lunch.

For these sessions, you must have a computer with high speed Internet access and a compatible Web browser. Learn more at www.rsmeansonline.com or call for a schedule: 1-800-334-3509 and press 1. Webinars are generally held on selected Wednesdays each month.

RSMeans Online™
\$299 per person

RSMeans CostWorks® CD
\$299 per person

Professional Development

For more information visit the RSMeans website at www.rsmeans.com

RSMeans Online™ Training

Construction estimating is vital to the decision-making process at each state of every project. RSMeansOnline works the way you do. It's systematic, flexible and intuitive. In this one day class you will see how you can estimate any phase of any project faster and better.

Some of what you'll learn:

- Customizing RSMeansOnline
- Making the most of RSMeans "Circle Reference" numbers
- How to integrate your cost data
- Generate reports, exporting estimates to MS Excel, sharing, collaborating and more

Also available: RSMeans Online™ training webinar

Facilities Construction Estimating

In this *two-day* course, professionals working in facilities management can get help with their daily challenges to establish budgets for all phases of a project.

Some of what you'll learn:

- Determining the full scope of a project
- Identifying the scope of risks and opportunities
- Creative solutions to estimating issues
- Organizing estimates for presentation and discussion
- Special techniques for repair/remodel and maintenance projects
- Negotiating project change orders

Who should attend: facility managers, engineers, contractors, facility tradespeople, planners, and project managers.

Scheduling with Microsoft Project

Two days of hands-on training gives you a look at the basics to putting it all together with MS Project to create a complete project schedule. Learn to work better and faster, manage changes and updates, enhance tracking, generate actionable reports, and boost control of your time and budget.

Some of what you'll learn:

- Defining task/activity relationships: link tasks, establish predecessor/successor relationships and create logs
- Baseline scheduling: the essential what/when
- Using MS Project to determine the critical path
- Integrate RSMeans data with MS Project
- The dollar-loaded schedule: enhance the reliability of this "must-know" technique for scheduling public projects.

Who should attend: contractors' project-management teams, architects and engineers, project owners and their representatives, and those interested in improving their project planning and scheduling and management skills.

Maintenance & Repair Estimating for Facilities

This *two-day* course teaches attendees how to plan, budget, and estimate the cost of ongoing and preventive maintenance and repair for existing buildings and grounds.

Some of what you'll learn:

- The most financially favorable maintenance, repair, and replacement scheduling and estimating
- Auditing and value engineering facilities
- Preventive planning and facilities upgrading
- Determining both in-house and contract-out service costs
- Annual, asset-protecting M&R plan

Who should attend: facility managers, maintenance supervisors, buildings and grounds superintendents, plant managers, planners, estimators, and others involved in facilities planning and budgeting.

Practical Project Management for Construction Professionals

In this *two-day* course, acquire the essential knowledge and develop the skills to effectively and efficiently execute the day-to-day responsibilities of the construction project manager.

Covers:

- General conditions of the construction contract
- Contract modifications: change orders and construction change directives
- Negotiations with subcontractors and vendors
- Effective writing: notification and communications
- Dispute resolution: claims and liens

Who should attend: architects, engineers, owner's representatives, project managers.

Mechanical & Electrical Estimating

This *two-day* course teaches attendees how to prepare more accurate and complete mechanical/electrical estimates, avoiding the pitfalls of omission and double-counting, while understanding the composition and rationale within the RSMeans mechanical/electrical database.

Some of what you'll learn:

- The unique way mechanical and electrical systems are interrelated
- M&E estimates—conceptual, planning, budgeting, and bidding stages
- Order of magnitude, square foot, assemblies, and unit price estimating
- Comparative cost analysis of equipment and design alternatives

Who should attend: architects, engineers, facilities managers, mechanical and electrical contractors, and others who need a highly reliable method for developing, understanding, and evaluating mechanical and electrical contracts.

Professional Development

For more information visit the RSMeans website at www.rsmeans.com

Unit Price Estimating

This interactive *two-day* seminar teaches attendees how to interpret project information and process it into final, detailed estimates with the greatest accuracy level.

The most important credential an estimator can take to the job is the ability to visualize construction and estimate accurately.

Some of what you'll learn:

- Interpreting the design in terms of cost
- The most detailed, time-tested methodology for accurate pricing
- Key cost drivers—material, labor, equipment, staging, and subcontracts
- Understanding direct and indirect costs for accurate job cost accounting and change order management

Who should attend: corporate and government estimators and purchasers, architects, engineers, and others who need to produce accurate project estimates.

RSMeans CostWorks® CD Training

This one-day course helps users become more familiar with the functionality of *RSMeans CostWorks* program. Each menu, icon, screen, and function found in the program is explained in depth. Time is devoted to hands-on estimating exercises.

Some of what you'll learn:

- Searching the database using all navigation methods
- Exporting RSMeans data to your preferred spreadsheet format
- Viewing crews, assembly components, and much more
- Automatically regionalizing the database

This training session requires you to bring a laptop computer to class.

When you register for this course you will receive an outline for your laptop requirements.

Also offering web training for CostWorks CD!

Facilities Est. Using RSMeans CostWorks® CD

Combines hands-on skill building with best estimating practices and real-life problems. Brings you up-to-date with key concepts, and provides tips, pointers, and guidelines to save time and avoid cost oversights and errors.

Some of what you'll learn:

- Estimating process concepts
- Customizing and adapting RSMeans cost data
- Establishing scope of work to account for all known variables
- Budget estimating: when, why, and how
- Site visits: what to look for—what you can't afford to overlook
- How to estimate repair and remodeling variables

This training session requires you to bring a laptop computer to class.

Who should attend: facility managers, architects, engineers, contractors, facility tradespeople, planners, project managers and anyone involved with JOC, SABRE, or IDIQ.

Conceptual Estimating Using RSMeans CostWorks® CD

This *two day* class uses the leading industry data and a powerful software package to develop highly accurate conceptual estimates for your construction projects. All attendees must bring a laptop computer loaded with the current year *Square Foot Model Costs* and the *Assemblies Cost Data CostWorks* titles.

Some of what you'll learn:

- Introduction to conceptual estimating
- Types of conceptual estimates
- Helpful hints
- Order of magnitude estimating
- Square foot estimating
- Assemblies estimating

Who should attend: architects, engineers, contractors, construction estimators, owner's representatives, and anyone looking for an electronic method for performing square foot estimating.

Assessing Scope of Work for Facility Construction Estimating

This *two-day* practical training program addresses the vital importance of understanding the SCOPE of projects in order to produce accurate cost estimates for facility repair and remodeling.

Some of what you'll learn:

- Discussions of site visits, plans/specs, record drawings of facilities, and site-specific lists
- Review of CSI divisions, including means, methods, materials, and the challenges of scoping each topic
- Exercises in SCOPE identification and SCOPE writing for accurate estimating of projects
- Hands-on exercises that require SCOPE, take-off, and pricing

Who should attend: corporate and government estimators, planners, facility managers, and others who need to produce accurate project estimates.

Unit Price Est. Using RSMeans CostWorks® CD

Step-by-step instruction and practice problems to identify and track key cost drivers—material, labor, equipment, staging, and subcontractors—for each specific task. Learn the most detailed, time-tested methodology for accurately "pricing" these variables, their impact on each other and on total cost.

Some of what you'll learn:

- Unit price cost estimating
- Order of magnitude, square foot, and assemblies estimating
- Quantity takeoff
- Direct and indirect construction costs
- Development of contractor's bill rates
- How to use *RSMeans Building Construction Cost Data*

This training session requires you to bring a laptop computer to class.

Who should attend: architects, engineers, corporate and government estimators, facility managers, and government procurement staff.

Professional Development

For more information visit the RSMeans website at www.rsmeans.com

Registration Information

Register early . . . Save up to \$100! Register 30 days before the start date of a seminar and save \$100 off your total fee. *Note: This discount can be applied only once per order. It cannot be applied to team discount registrations or any other special offer.*

How to register Register by phone today! The RSMeans toll-free number for making reservations is 1-800-334-3509, Press 1.

Two day seminar registration fee - \$935. One-day RSMeans CostWorks® training registration fee - \$375. To register by mail, complete the registration form and return, with your full fee, to: RSMeans Seminars, 700 Longwater Drive, Norwell, MA 02061.

Government pricing All federal government employees save off the regular seminar price. Other promotional discounts cannot be combined with the government discount.

Team discount program for two to four seminar registrations. Call for pricing: 1-800-334-3509, Press 1

Multiple course discounts When signing up for two or more courses, call for pricing.

Refund policy Cancellations will be accepted up to ten business days prior to the seminar start. There are no refunds for cancellations received later than ten working days prior to the first day of the seminar. A \$150 processing fee will be applied for all cancellations. Written notice of cancellation is required. Substitutions can be made at any time before the session starts. **No-shows are subject to the full seminar fee.**

AACE approved courses Many seminars described and offered here have been approved for 14 hours (1.4 recertification credits) of credit by the AACE

International Certification Board toward meeting the continuing education requirements for recertification as a Certified Cost Engineer/Certified Cost Consultant.

AIA Continuing Education We are registered with the AIA Continuing Education System (AIA/CES) and are committed to developing quality learning activities in accordance with the CES criteria. Many seminars meet the AIA/CES criteria for Quality Level 2. AIA members may receive (14) learning units (LUs) for each two-day RSMeans course.

Daily course schedule The first day of each seminar session begins at 8:30 a.m. and ends at 4:30 p.m. The second day begins at 8:00 a.m. and ends at 4:00 p.m. Participants are urged to bring a hand-held calculator, since many actual problems will be worked out in each session.

Continental breakfast Your registration includes the cost of a continental breakfast, and a morning and afternoon refreshment break. These informal segments allow you to discuss topics of mutual interest with other seminar attendees. (You are free to make your own lunch and dinner arrangements.)

Hotel/transportation arrangements RSMeans arranges to hold a block of rooms at most host hotels. To take advantage of special group rates when making your reservation, be sure to mention that you are attending the RSMeans seminar. You are, of course, free to stay at the lodging place of your choice. **(Hotel reservations and transportation arrangements should be made directly by seminar attendees.)**

Important Class sizes are limited, so please register as soon as possible.

Note: Pricing subject to change.

Registration Form

ADDS-1000

Call 1-800-334-3509, Press 1 to register or FAX this form 1-800-632-6732. Visit our website: www.rsmeans.com

Please register the following people for the RSMeans construction seminars as shown here. We understand that we must make our own hotel reservations if overnight stays are necessary.

☐ Full payment of \$_____ enclosed.

☐ Bill me.

Please print name of registrant(s).

(To appear on certificate of completion)

P.O. #:

GOVERNMENT AGENCIES MUST SUPPLY PURCHASE ORDER NUMBER OR TRAINING FORM.

Firm name _____

Address _____

City/State/Zip _____

Telephone no. _____ Fax no. _____

E-mail address _____

Charge registration(s) to: ☐ MasterCard ☐ VISA ☐ American Express

Account no. _____ Exp. date _____

Cardholder's signature _____

Seminar name _____

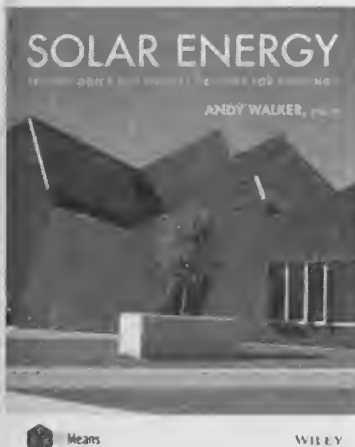
Seminar City _____

Please mail check to: RSMeans Seminars, 700 Longwater Drive, Norwell, MA 02061 USA

New Titles - Reference Books

For more information visit the RSMeans website at www.rsmeans.com

Solar Energy: Technologies & Project Delivery for Buildings

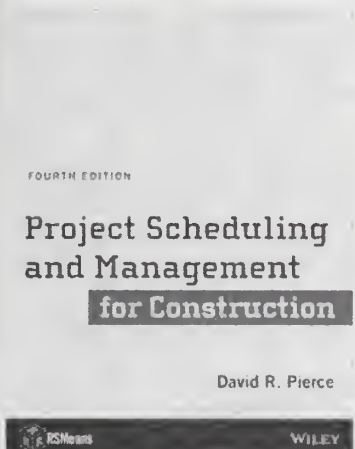


by Andy Walker

An authoritative reference on the design of solar energy systems in building projects, with applications, operating principles, and simple tools for the construction, engineering, and design professionals, the book simplifies the solar design and engineering process and provides sample documentation for the complete design of a solar energy system for buildings.

\$85.00 | 320 pages, hardcover | Catalog no. 67365

Project Scheduling & Management for Construction, 4th Edition



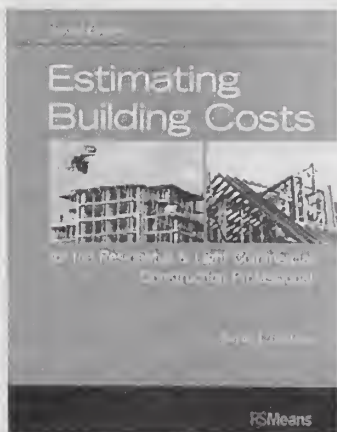
by David R. Pierce

First published in 1988 by RSMeans, the new edition of *Project Scheduling and Management for Construction* has been substantially revised for both professionals and students enrolled in construction management and civil engineering programs. While retaining its emphasis on developing practical, professional-level scheduling skills, the new edition is a relatable, real world case study.

\$95.00 | 272 pages, softcover | Catalog no. 67367

Estimating Building Costs, 2nd Edition

For the Residential & Light Commercial Construction Professional



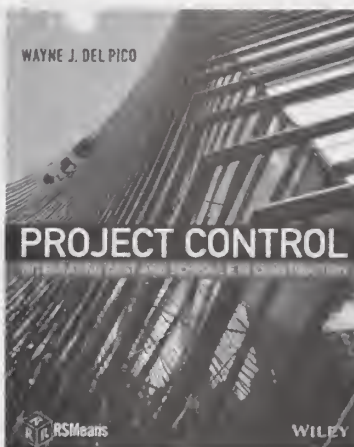
by Wayne J. Del Pico

This book guides readers through the entire estimating process, explaining in detail how to put together a reliable estimate that can be used not only for budgeting, but also for developing a schedule, managing a project, dealing with contingencies, and ultimately making a profit.

Completely revised and updated to reflect the CSI MasterFormat 2010 system, this practical guide describes estimating techniques for each building system and how to apply them according to the latest industry standards.

\$75.00 | 398 pages, softcover | Catalog no. 67343A

Project Control: Integrating Cost & Schedule in Construction

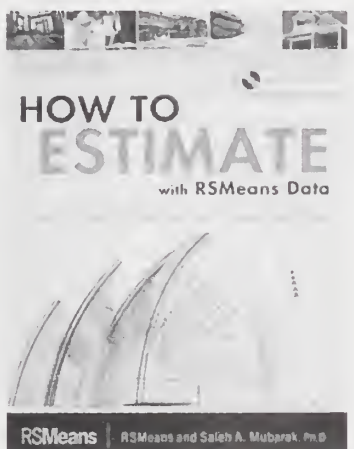


by Wayne J. Del Pico

Written by a seasoned professional in the field, *Project Control: Integrating Cost and Schedule in Construction* fills a void in the area of project control as applied in the construction industry today. It demonstrates how productivity models for an individual project are created, monitored, and controlled, and how corrective actions are implemented as deviations from the baseline occur.

\$95.00 | 240 pages, softcover | Catalog no. 67366

How to Estimate with Means Data & CostWorks, 4th Edition

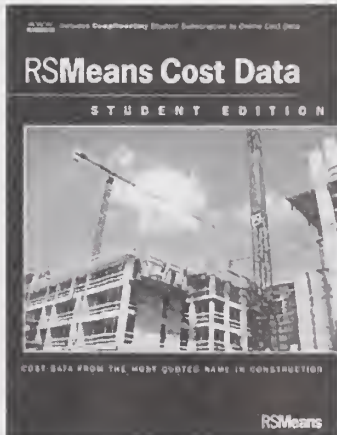


by RSMeans and
Saleh A. Mubarak, Ph.D.

This step-by-step guide takes you through all the major construction items with extensive coverage of site work, concrete and masonry, wood and metal framing, doors and windows, and other divisions. The only construction cost estimating handbook that uses the most popular source of construction data, RSMeans, this indispensable guide features access to the instructional version of CostWorks in electronic form, enabling you to practice techniques to solve real-world estimating problems.

\$75.00 | 292 pages, softcover | Includes CostWorks CD
Catalog no. 67324C

RSMeans Cost Data, Student Edition



This book provides a thorough introduction to cost estimating in a self-contained print and online package. With clear explanations and a hands-on, example-driven approach, it is the ideal reference for students and new professionals.

Features include:

- Commercial and residential construction cost data in print and online formats
- Complete how-to guidance on the essentials of cost estimating
- A supplemental website with plans, problem sets, and a full sample estimate

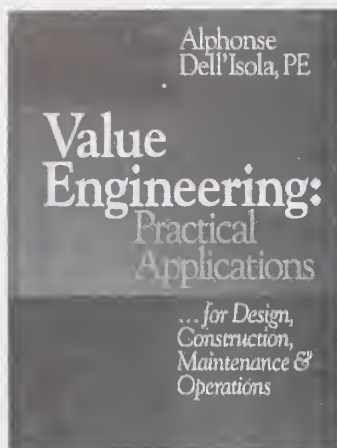
\$99.00 | 512 pages, softcover | Catalog no. 67363

Reference Books

For more information visit the RSMeans website at www.rsmeans.com

Value Engineering: Practical Applications

For Design, Construction, Maintenance & Operations



by Alphonse Dell'Isola, PE

A tool for immediate application—for engineers, architects, facility managers, owners, and contractors. Includes making the case for VE—the management briefing; integrating VE into planning, budgeting, and design; conducting life cycle costing; using VE methodology in design review and consultant selection; case studies; VE workbook; and a life cycle costing program on disk.

\$85.00 | Over 450 pages, illustrated, softcover | Catalog no. 67319A

Risk Management for Design & Construction



Introduces risk as a central pillar of project management and shows how a project manager can prepare to deal with uncertainty. Experts in the field use clear, straightforward terminology to demystify the concepts of project uncertainty and risk. Includes:

- Integrated cost and schedule risk analysis
- An introduction to a ready-to-use system of analyzing a project's risks and tools to proactively manage risks
- A methodology that was developed and used by the Washington State Department of Transportation

- Case studies and examples on the proper application of principles
- Information about combining value analysis with risk analysis

\$125.00 | Over 250 pages, softcover | Catalog no. 67359

How Your House Works, 2nd Edition

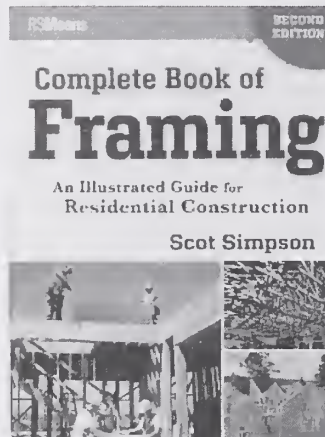


by Charlie Wing

Knowledge of your home's systems helps you control repair and construction costs and makes sure the correct elements are being installed or replaced. This book uncovers the mysteries behind just about every major appliance and building element in your house. See-through, cross-section drawings in full color show you exactly how these things should be put together and how they function, including what to check if they don't work. It just might save you having to call in a professional.

\$22.95 | 192 pages, softcover | Catalog no. 67351A

Complete Book of Framing, 2nd Edition



by Scot Simpson

This updated, easy-to-learn guide to rough carpentry and framing is written by an expert with more than thirty years of framing experience. Starting with the basics, this book begins with types of lumber, nails, and what tools are needed, followed by detailed, fully illustrated steps for framing each building element. Framing-Friendly Tips throughout the book show how to get a task done right—and more easily.

\$29.95 | 352 pages, softcover | Catalog no. 67353A

Green Home Improvement



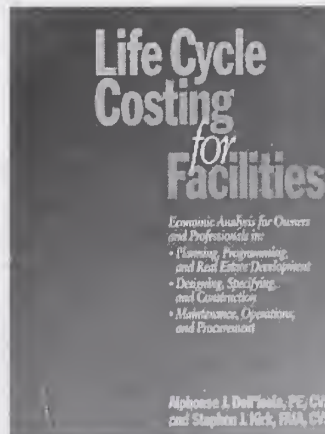
by Daniel D. Chiras, PhD

With energy costs rising and environmental awareness increasing, people are looking to make their homes greener. This book, with 65 projects and actual costs and projected savings help homeowners prioritize their green improvements.

Projects range from simple water savers that cost only a few dollars, to bigger-ticket items such as HVAC systems. With color photos and cost estimates, each project compares options and describes the work involved, the benefits, and the savings.

\$34.95 | 320 pages, illustrated, softcover | Catalog no. 67355

Life Cycle Costing for Facilities



by Alphonse Dell'Isola
and Dr. Steven Kirk

Guidance for achieving higher quality design and construction projects at lower costs! Cost-cutting efforts often sacrifice quality to yield the cheapest product. Life cycle costing enables building designers and owners to achieve both. The authors of this book show how LCC can work for a variety of projects — from roads to HVAC upgrades to different types of buildings.

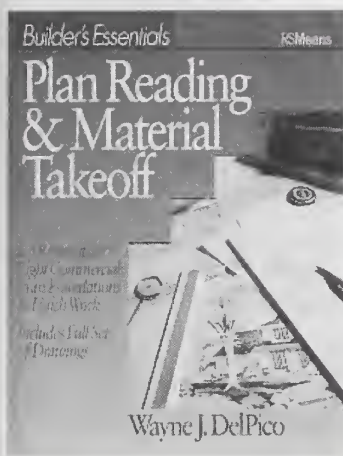
\$99.95 | 396 pages, hardcover | Catalog no. 67341

Reference Books

For more information visit the RSMeans website at www.rsmeans.com

Builder's Essentials: Plan Reading & Material Takeoff

For Residential and Light Commercial Construction

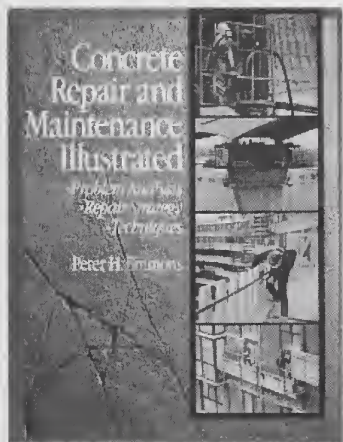


by Wayne J. DelPico

A valuable tool for understanding plans and specs, and accurately calculating material quantities. Step-by-step instructions and takeoff procedures based on a full set of working drawings.

\$45.00 | Over 420 pages, softcover | Catalog no. 67307

Concrete Repair & Maintenance Illustrated

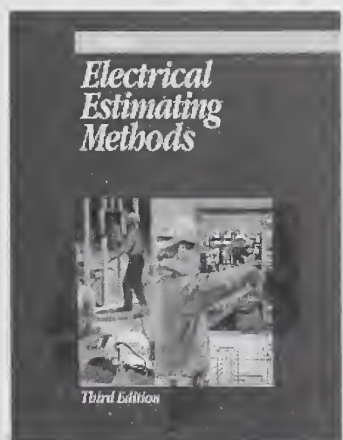


by Peter Emmons

Hundreds of illustrations show users how to analyze, repair, clean, and maintain concrete structures for optimal performance and cost effectiveness. From parking garages to roads and bridges to structural concrete, this comprehensive book describes the causes, effects, and remedies for concrete wear and failure. Invaluable for planning jobs, selecting materials, and training employees, this book is a must-have for concrete specialists, general contractors, facility managers, civil and structural engineers, and architects.

\$75.00 | 300 pages, illustrated, softcover | Catalog no. 67146

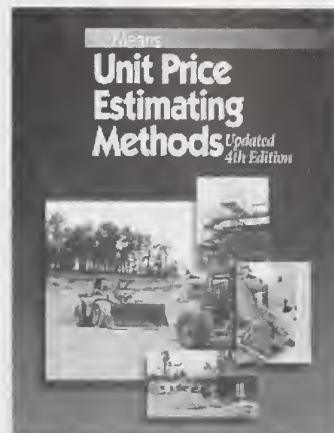
Electrical Estimating Methods, 3rd Edition



Expanded edition includes sample estimates and cost information in keeping with the latest version of the CSI MasterFormat and UNIFORMAT II. Complete coverage of fiber optic and uninterruptible power supply electrical systems, broken down by components, and explained in detail. Includes a new chapter on computerized estimating methods. A practical companion to *RSMeans Electrical Cost Data*.

\$75.00 | Over 325 pages, hardcover | Catalog no. 67230B

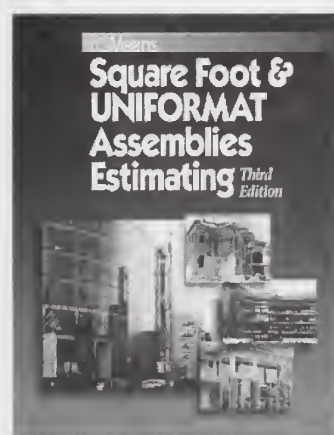
Means Unit Price Estimating Methods, 4th Edition



Includes cost data and estimating examples, updated to reflect changes to the CSI numbering system and new features of RSMeans cost data. It describes the most productive, universally accepted ways to estimate, and uses checklists and forms to illustrate shortcuts and timesavers. A model estimate demonstrates procedures. A new chapter explores computer estimating alternatives.

\$75.00 | Over 350 pages, illustrated, softcover | Catalog no. 67303B

Square Foot & UNIFORMAT Assemblies Estimating Methods, 3rd Edition



Develop realistic square foot and assemblies costs for budgeting and construction funding. The new edition features updated guidance on square foot and assemblies estimating using UNIFORMAT II. An essential reference for anyone who performs conceptual estimates.

\$75.00 | Over 300 pages, illustrated, softcover | Catalog no. 67145B

Residential & Light Commercial Construction Standards, 3rd Edition



Updated by RSMeans and contributing authors

This book provides authoritative requirements and recommendations compiled from leading professional associations, industry publications, and building code organizations. This all-in-one reference helps establish a standard for workmanship, quickly resolve disputes, and avoid defect claims. Updated third edition includes new coverage of green building, seismic, hurricane, and mold-resistant construction.

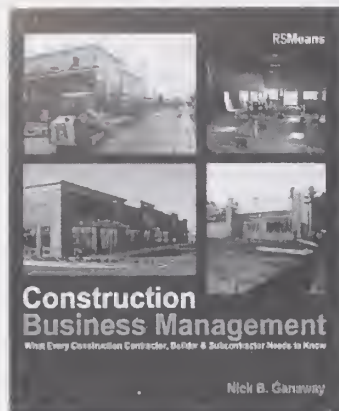
\$65.00 | Over 550 pages, illustrated, softcover | Catalog no. 67322B

Reference Books

For more information visit the RSMeans website at www.rsmeans.com

Unit prices according to the latest MasterFormat!

Construction Business Management

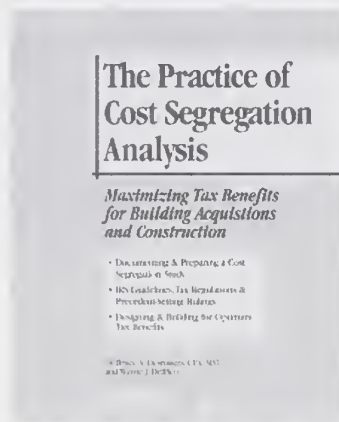


by Nick Ganaway

Only 43% of construction firms stay in business after four years. Make sure your company thrives with valuable guidance from a pro with 25 years of success as a commercial contractor. Find out what it takes to build all aspects of a business that is profitable, enjoyable, and enduring. With a bonus chapter on retail construction.

\$55.00 | 200 pages, softcover | Catalog no. 67352

The Practice of Cost Segregation Analysis



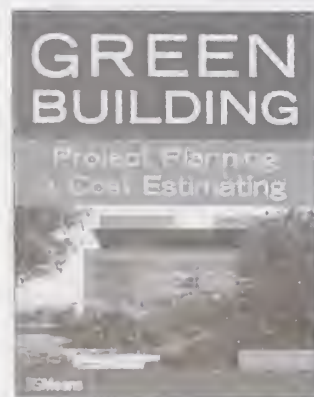
by Bruce A. Desrosiers and Wayne J. DelPico

This expert guide walks you through the practice of cost segregation analysis, which enables property owners to defer taxes and benefit from "accelerated cost recovery" through depreciation deductions on assets that are properly identified and classified.

With a glossary of terms, sample cost segregation estimates for various building types, key information resources, and updates via a dedicated website, this book is a critical resource for anyone involved in cost segregation analysis.

\$105.00 | Over 225 pages | Catalog no. 67345

Green Building: Project Planning & Cost Estimating, 3rd Edition

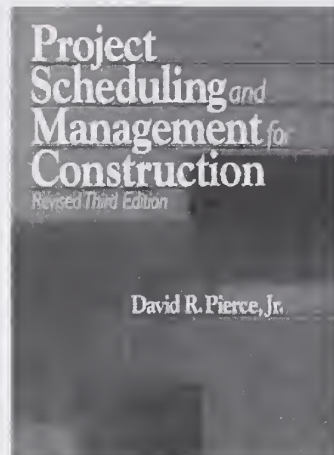


Since the widely read first edition of this book, green building has gone from a growing trend to a major force in design and construction.

This new edition has been updated with the latest in green building technologies, design concepts, standards, and costs. Full-color with all new case studies—plus a new chapter on commercial real estate.

\$110.00 | Over 450 pages, softcover | Catalog no. 67338B

Project Scheduling & Management for Construction, 3rd Edition

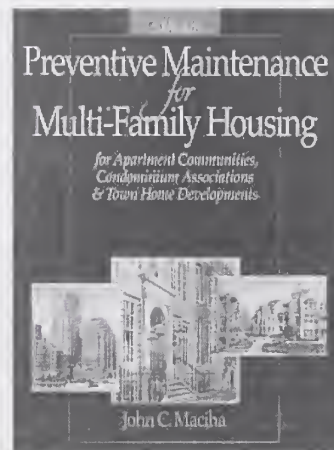


by David R. Pierce, Jr.

A comprehensive yet easy-to-follow guide to construction project scheduling and control—from vital project management principles through the latest scheduling, tracking, and controlling techniques. The author is a leading authority on scheduling, with years of field and teaching experience at leading academic institutions. Spend a few hours with this book and come away with a solid understanding of this essential management topic.

\$64.95 | Over 300 pages, illustrated, hardcover | Catalog no. 67247B

Preventive Maintenance for Multi-Family Housing



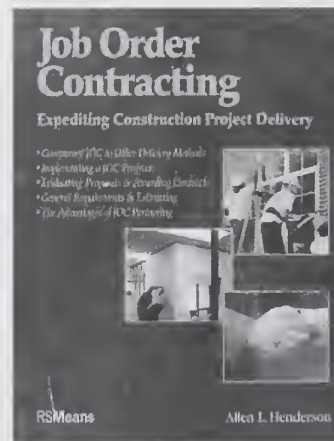
by John C. Maciha

Prepared by one of the nation's leading experts on multi-family housing.

This complete PM system for apartment and condominium communities features expert guidance, checklists for buildings and grounds maintenance tasks and their frequencies, a reusable wall chart to track maintenance, and a dedicated website featuring customizable electronic forms. A must-have for anyone involved with multi-family housing maintenance and upkeep.

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Job Order Contracting: Expediting Construction Project Delivery



by Allen L. Henderson

Expert guidance to help you implement JOC—fast becoming the preferred project delivery method for repair and renovation, minor new construction, and maintenance projects in the public sector and in many states and municipalities. The author, a leading JOC expert and practitioner, shows how to:

- Establish a JOC program
- Evaluate proposals & award contracts
- Handle general requirements and estimating
- Partner for maximum benefits

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Reference Books

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Construction Supervision



This brand new title inspires supervisory excellence with proven tactics and techniques applied by thousands of construction supervisors over the past decade. Recognizing the unique and critical role the supervisor plays in project success, the book's leadership guidelines carve out a practical blueprint for motivating work performance and increasing productivity through effective communication.

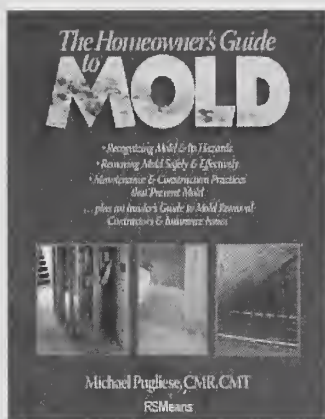
Features:

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- Coverage of supervision from the foreman to the superintendent level
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The Homeowner's Guide to Mold



By Michael Pugliese

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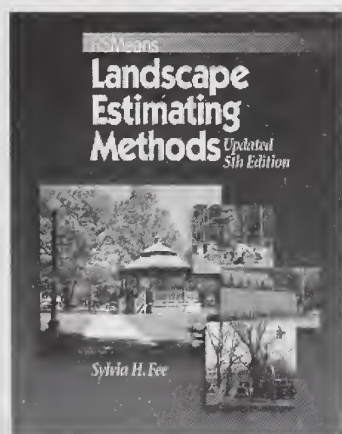
Mold, whether caused by leaks, humidity or flooding, is a real health and financial issue—for homeowners and contractors.

This full-color book explains:

- Construction and maintenance practices to prevent mold
- How to inspect for and remove mold
- Mold remediation procedures and costs
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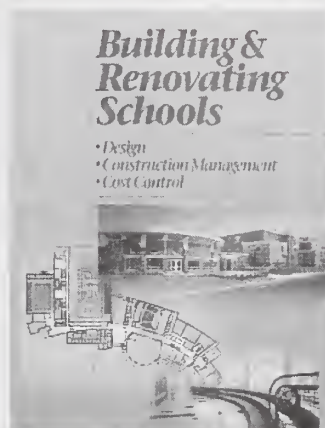


Answers questions about preparing competitive landscape construction estimates, with up-to-date cost estimates and the new MasterFormat classification system. Expanded and revised to address the latest materials and methods, including new coverage on approaches to green building. Includes:

- Step-by-step explanation of the estimating process
- Sample forms and worksheets that save time and prevent errors

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This all-inclusive guide covers every step of the school construction process—from initial planning, needs assessment, and design, right through moving into the new facility. A must-have resource for anyone concerned with new school construction or renovation. With square foot cost models for elementary, middle, and high school facilities, and real-life case studies of recently completed school projects.

The contributors to this book—architects, construction project managers, contractors, and estimators who specialize in school construction—provide start-to-finish, expert guidance on the process.

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Universal Design Ideas for Style, Comfort & Safety

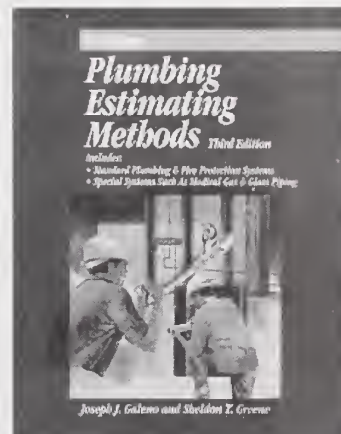


by RSMeans and Lexicon Consulting, Inc.

Incorporating universal design when building or remodeling helps people of any age and physical ability more fully and safely enjoy their living spaces. This book shows how universal design can be artfully blended into the most attractive homes. It discusses specialized products like adjustable countertops and chair lifts, as well as simple ways to enhance a home's safety and comfort. With color photos and expert guidance, every area of the home is covered. Includes budget estimates that give an idea how much projects will cost.

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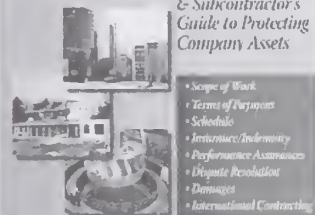
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A Contractor's & Subcontractor's Guide to Protecting Company Assets



RSMeans

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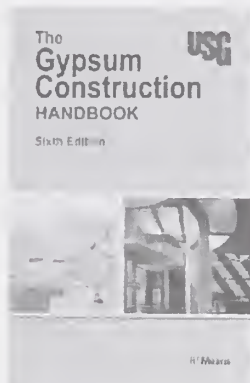
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by USG

An invaluable reference of construction procedures for gypsum drywall, cement board, veneer plaster, and conventional plaster. This new edition includes the newest product developments, installation methods, fire- and sound-rated construction information, illustrated framing-to-finish application instructions, estimating and planning information, and more. Great for architects and engineers; contractors, builders, and dealers; apprentices and training programs; building inspectors and code officials; and anyone

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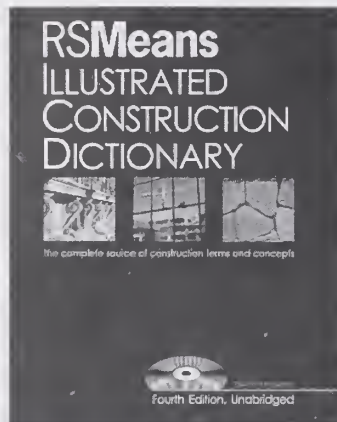
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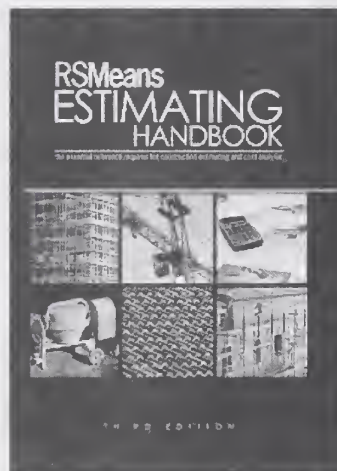
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Project Description (NEW construction only, please)

☑ Building Use (Office School . . .) _____

Owner _____

☑ Address (City, State) _____

Architect _____

General Contractor _____

☑ Total Building Area (SF) _____

☑ Bid Date _____

☑ Ground Floor (SF) _____

☑ Typical Bay Size _____

☑ Frame (Wood, Steel . . .) _____

☑ Occupant Capacity _____

☑ Exterior Wall (Brick, Tilt-up . . .) _____

☑ Labor Force: _____ % Union _____ % Non-Union

☑ Basement: (check one) ☐ Full ☐ Partial ☐ None

☑ Project Description (Circle one number in each line.)

☑ Number of Stories _____

1. Economy 2. Average 3. Custom 4. Luxury

☑ Floor-to-Floor Height _____

1. Square 2. Rectangular 3. Irregular 4. Very Irregular

☑ Volume (C.F.) _____

Comments _____

% Air Conditioned _____ Tons _____

Total Project Cost \$ _____

A	☑	General Conditions	\$
B	☑	Site Work	\$
C	☑	Concrete	\$
D	☑	Masonry	\$
E	☑	Metals	\$
F	☑	Wood & Plastics	\$
G	☑	Thermal & Moisture Protection	\$
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Installing Contractor's Overhead & Profit

Below are the **average** installing contractor's percentage markups applied to base labor rates to arrive at typical billing rates.

Column A: Labor rates are based on union wages averaged for 30 major U.S. cities. Base rates including fringe benefits are listed hourly and daily. These figures are the sum of the wage rate and employer-paid fringe benefits such as vacation pay, employer-paid health and welfare costs, pension costs, plus appropriate training and industry advancement funds costs.

Column B: Workers' compensation rates are the national average of state rates established for each trade.

Column C: Column C lists average fixed overhead figures for all trades. Included are federal and state unemployment costs set at 7.8%; social security taxes (FICA) set at 7.65%; builder's risk insurance costs set at 0.44%; and public liability costs set at 2.02%. All the percentages except those for social security taxes vary from state to state as well as from company to company.

Columns D and E: Percentages in Columns D and E are based on the presumption that the installing contractor has annual billing of \$4,000,000 and up. Overhead percentages may increase with smaller annual billing. The overhead percentages for any given contractor may vary greatly and depend on a number of factors, such as the contractor's annual volume, engineering and logistical support costs, and staff requirements. The figures for overhead and profit will also vary depending on the type of job, the job location, and the prevailing economic conditions. All factors should be examined very carefully for each job.

Column F: Column F lists the total of Columns B, C, D, and E.

Column G: Column G is Column A (hourly base labor rate) multiplied by the percentage in Column F (O&P percentage).

Column H: Column H is the total of Column A (hourly base labor rate) plus Column G (Total O&P).

Column I: Column I is Column H multiplied by eight hours.

Abbr.	Trade	A		B	C	D	E	F		G	H		I
		Base Rate Incl. Fringes		Work-ers' Comp. Ins.	Average Fixed Over-head	Over-head	Profit	Total Overhead & Profit		Amount	Rate with O & P		
		Hourly	Daily					%	Hourly		Daily		
Skwk	Skilled Workers Average (35 trades)	\$47.30	\$378.40	14.0%	17.9%	13.0%	10%	54.9%	\$25.95	\$ 73.25	\$586.00		
	Helpers Average (5 trades)	34.65	277.20	16.1		11.0		55.0	19.05	53.70	429.60		
	Foreman Average, Inside (\$5.50 over trade)	47.80	382.40	14.0		13.0		54.9	26.25	74.05	592.40		
	Foreman Average, Outside (\$2.00 over trade)	49.30	394.40	14.0		13.0		54.9	27.05	76.35	610.80		
Clab	Common Building Laborers	36.65	293.20	15.4		11.0		54.3	19.90	56.55	452.40		
Asbe	Asbestos/Insulation Workers/Pipe Coverers	51.15	409.20	11.7		16.0		55.6	28.45	79.60	636.80		
Boil	Boilermakers	59.90	479.20	9.9		16.0		53.8	32.25	92.15	737.20		
Bric	Bricklayers	45.60	364.80	13.5		11.0		52.4	23.90	69.50	556.00		
Brhe	Bricklayer Helpers	37.00	296.00	13.5		11.0		52.4	19.40	56.40	451.20		
Carp	Carpenters	45.85	366.80	15.4		11.0		54.3	24.90	70.75	566.00		
Cefi	Cement Finishers	44.05	352.40	8.9		11.0		47.8	21.05	65.10	520.80		
Elec	Electricians	53.35	426.80	5.8		16.0		49.7	26.50	79.85	638.80		
Elev	Elevator Constructors	74.15	593.20	5.7		16.0		49.6	36.80	110.95	887.60		
Eqhv	Equipment Operators, Crane or Shovel	50.25	402.00	9.7		14.0		51.6	25.95	76.20	609.60		
Eqmd	Equipment Operators, Medium Equipment	48.90	391.20	9.7		14.0		51.6	25.25	74.15	593.20		
Edlt	Equipment Operators, Light Equipment	47.05	376.40	9.7		14.0		51.6	24.30	71.35	570.80		
Eqol	Equipment Operators, Oilers	43.55	348.40	9.7		14.0		51.6	22.45	66.00	528.00		
Eqmm	Equipment Operators, Master Mechanics	50.15	401.20	9.7		14.0		51.6	25.90	76.05	608.40		
Glaz	Glaziers	44.05	352.40	13.2		11.0		52.1	22.95	67.00	536.00		
Lath	Lathers	40.60	324.80	8.1		11.0		47.0	19.10	59.70	477.60		
Marb	Marble Setters	42.25	338.00	13.5		11.0		52.4	22.15	64.40	515.20		
Mill	Millwrights	48.10	384.80	8.4		11.0		47.3	22.75	70.85	566.80		
Mstz	Mosaic & Terrazzo Workers	41.65	333.20	8.5		11.0		47.4	19.75	61.40	491.20		
Pord	Painters, Ordinary	39.55	316.40	11.5		11.0		50.4	19.95	59.50	476.00		
Psst	Painters, Structural Steel	40.50	324.00	41.5		11.0		80.4	32.55	73.05	584.40		
Pape	Paper Hangers	39.80	318.40	11.5		11.0		50.4	20.05	59.85	478.80		
Pile	Pile Drivers	44.40	355.20	14.7		16.0		58.6	26.00	70.40	563.20		
Plas	Plasterers	41.95	335.60	11.6		11.0		50.5	21.20	63.15	505.20		
Plah	Plasterer Helpers	37.20	297.60	11.6		11.0		50.5	18.80	56.00	448.00		
Plum	Plumbers	57.55	460.40	7.1		16.0		51.0	29.35	86.90	695.20		
Rodm	Rodmen (Reinforcing)	50.65	405.20	15.2		14.0		57.1	28.90	79.55	636.40		
Rofc	Roofers, Composition	39.15	313.20	31.3		11.0		70.2	27.50	66.65	533.20		
Rots	Roofers, Tile & Slate	39.35	314.80	31.3		11.0		70.2	27.60	66.95	535.60		
Rohe	Roofers, Helpers (Composition)	29.15	233.20	31.3		11.0		70.2	20.45	49.60	396.80		
Shee	Sheet Metal Workers	54.70	437.60	8.8		16.0		52.7	28.85	83.55	668.40		
Spri	Sprinkler Installers	55.40	443.20	7.2		16.0		51.1	28.30	83.70	669.60		
Stpi	Steamfitters or Pipefitters	58.50	468.00	7.1		16.0		51.0	29.85	88.35	706.80		
Ston	Stone Masons	45.85	366.80	13.5		11.0		52.4	24.05	69.90	559.20		
Sswk	Structural Steel Workers	51.10	408.80	34.6		14.0		76.5	39.10	90.20	721.60		
Tilf	Tile Layers	41.95	335.60	8.5		11.0		47.4	19.90	61.85	494.80		
Tilh	Tile Layers Helpers	33.25	266.00	8.5		11.0		47.4	15.75	49.00	392.00		
Trlt	Truck Drivers, Light	36.50	292.00	13.7		11.0		52.6	19.20	55.70	445.60		
Trhv	Truck Drivers, Heavy	37.55	300.40	13.7		11.0		52.6	19.75	57.30	458.40		
Sswl	Welders, Structural Steel	51.10	408.80	34.6		14.0		76.5	39.10	90.20	721.60		
Wrck	*Wrecking	36.65	293.20	29.2		11.0		68.1	24.95	61.60	492.80		

*Not included in averages

Building Construction Cost Data

Building Construction Cost Data 2014

72nd Annual Edition

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2 Existing Conditions	13 Special Construction	33 Utilities
3 Concrete	14 Conveying Equipment	34 Transportation
4 Masonry	21 Fire Suppression	35 Waterway & Marine
5 Metals	22 Plumbing	41 Material Processing & Handling Equipment
6 Wood, Plastics & Composites	23 Heating, Ventilating & Air Conditioning	44 Pollution & Waste Control Equipment
7 Thermal & Moisture Protection	26 Electrical	46 Water & Wastewater Equipment
8 Openings	27 Communications	48 Electrical Power Generation
9 Finishes	28 Electronic Safety & Security	
10 Specialties	31 Earthwork	
11 Equipment		

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